

# REFLECTOR™ Enhancer

Flooring System



CSI Division 9: Finishes - Flooring

**elite crete systems**

Engineered High Performance Surfaces & Flooring

## REFLECTOR™ Enhancer Flooring Systems

are specialty, high build, self leveling, fluid applied floor coatings. Engineered for residential and commercial applications where a durable, long lasting, aesthetically unique, easy to maintain and completely custom floor is required.

Due to the unique and unrepeatable nature of these flooring systems, consult with a technical representative before installing or specifying.

### TYPICAL AREAS OF USE

- Retail stores
- Shopping malls
- Automobile showrooms
- Restaurants & bars
- Hotels & casinos
- Art galleries & museums
- Collegiate & professional sports complexes

### ADVANTAGES

- Ease of maintenance
- Aesthetic improvements
- Hard and abrasion resistant
- VOC free - CA 01350 air quality compliant
- Stain and chemical resistant
- Anti-microbial
- Satin or gloss finish
- Fast set available for quicker turn around time
- Special colors can match design or preferred colors

### SPECIFICATION OVERVIEW

- Name: REFLECTOR™ Enhancer Flooring System
- Finish: Gloss or satin
- Cured thickness: @ 40 to 65 mils
- Surface preparation and detailed application instructions per manufacturer
- Manufacturer: Elite Crete Systems, Inc. +1-219-465-7671

### SAMPLE COLOR CHART



**NOTE:** The colors depicted on this technical document may not illustrate the exact color. Contact a technical support representative for a more accurate color sample. Custom colors available upon request.

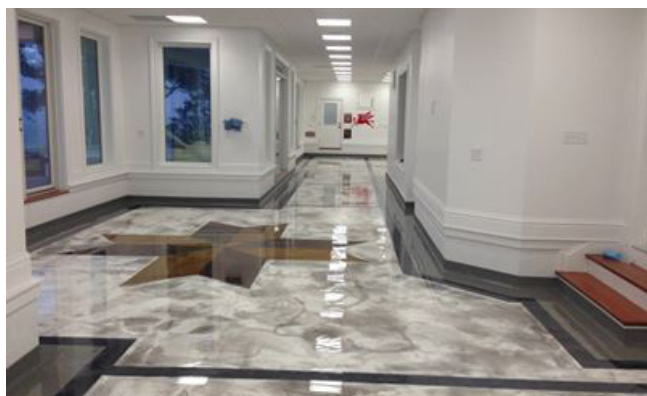
## PHYSICAL PROPERTIES

(@ 73°F / 23°C, 7 day ambient cure as a coating)

| PROPERTY                     | TEST   | RESULT                   |
|------------------------------|--|--------------------------|
| VOC Content                  | N/A  | 0 g/l                    |
| Shore D Hardness             | ASTM D-2240                                      | 72-83                    |
| Water Absorption (2hr boil)  | ASTM D-570                                       | 0.03-0.19 %              |
| Toxicity                     | N/A  | None*                    |
| Heat Distortion Temperature  | ASTM D-648                                       | 120-130 F / 55 C         |
| Compressive Strength         | ASTM D-695                                       | 7,500-13,400 psi         |
| Tensile Strength             | ASTM D-638                                       | 2,100-4,200 psi          |
| Flexural Strength            | ASTM D-790                                       | 4,500-6,500 psi          |
| Abrasion Resistance **       | ASTM D-4060                                      | 9-30 mg loss             |
| Slant Shear                  | ASTM C-882                                       | 100% concrete failure    |
| Flammability                 | ASTM D-635                                       | Self-extinguishing       |
| Flame Spread Rate (NFPA 101) | ASTM E-84  | Class A                  |
| Elongation at Break          | ASTM D-638                                       | 4.5 % minimum            |
| Perm Rating                  | ASTM E-96-13                                     | >0.10 @ 16 mils. Class 1 |
| Chemical resistance          | Contact technical representative for chart       |                          |
| Coefficient of Friction      | Adjusted per requirement. Generally 0.50 to 0.80 |                          |
| COF Guidelines:              | ADA Flat Surfaces                                | 0.60                     |
|                              | ADA Inclined Surfaces                            | 0.80                     |
|                              | OSHA   | 0.50                     |
|                              | NFPA   | 0.68                     |

\* FDA, USDA, & CIFA Acceptable

\*\* CS-17 Wheel, 1 KG load, 1,000 cycles



# elite crete systems

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The information herein is general information to assist our customers in determining whether our products are suitable for their specific applications. Our products are intended for sale to commercial and industrial customers. We require that customers should inspect and test our products before use to satisfy themselves as to the content and suitability for the applications they intend to use our products for. Nothing herein shall constitute any warranty expressed or implied, including any warranty of merchantability or fitness for a particular purpose, nor is replacement of our materials and in no event shall we be liable for incidental or consequential damages.

## PI.231 – PRODUCT INFORMATION: REFLECTOR™ Enhancer Flooring Systems

Revised: 3.16.16

### DESCRIPTION

REFLECTOR™ Enhancer Flooring Systems are fluid applied floor coating for residential, commercial and industrial applications where a durable, long lasting, yet aesthetically unique and custom floor is required.

REFLECTOR™ Enhancer Flooring System is typically applied at a combined product thickness of 25 to 50 mils but overall thickness can vary depending on job requirements, required performance characteristics and which specific system combination is chosen.

Due to the unique and unrepeatable nature of these flooring systems, consult with an Elite Crete Systems technical representative before installing or specifying.

### ADVANTAGES

- Virtually unlimited colors and combinations
- Unique pattern and design is different every time
- Zero to very low VOC
- Fast set available for quicker turn around time
- New or existing floors
- Electrostatic dissipative finish is optional
- Completely seamless and easy to maintain
- Available in satin or gloss
- Exceptional wear and abrasion resistance
- Stain and chemical resistant
- No wax or floor finish required
- Competitively priced with traditional flooring options

### TYPICAL AREAS OF USE

- Retail stores
- Shopping malls
- Showrooms
- Concourses
- Medical
- Educational

### TYPICAL SYSTEMS

Brackets indicate option. Additional product substitutions available.

#### REFS - S

1. E100-VB5™ (optional two coats)
2. [E100-PT1™ Standard Set], [E100-PT1™ Fast Set] or [E100-UV1™] with REFLECTOR™ Enhancer additive

#### REFS - ST

1. E100-VB5™ (optional two coats)
2. [E100-PT1™ Standard Set], [E100-PT1™ Fast Set] or [E100-UV1™] with REFLECTOR™ Enhancer additive
3. [E100-PT1™ Standard Set or [E100-PT1™ Fast Set] as clear coat

#### REFS - SP

1. E100-VB5™ (optional two coats)
2. [E100-PT1™ Standard Set], [E100-PT1™ Fast Set] or [E100-UV1™] with REFLECTOR™ Enhancer additive
3. [AUS-V™ without AGG] or [AUS-V™ with AGG]

#### REFS - STP

1. E100-VB5™ (optional two coats)
2. [E100-PT1™ Standard Set], [E100-PT1™ Fast Set] or [E100-UV1™] with REFLECTOR™ Enhancer additive
3. [E100-PT1™ Standard Set or [E100-PT1™ Fast Set] as clear coat

4. [AUS-V™ without AGG] or [AUS-V™ with AGG]

#### REFS - C

1. E100-VB5™ (optional two coats)
2. E100-PT4™ Pigmented: choose color
3. [E100-PT1™ Standard Set], [E100-PT1™ Fast Set] or [E100-UV1™] with REFLECTOR™ Enhancer additive

#### REFS - CT

1. E100-VB5™ (optional two coats)
2. E100-PT4™ Pigmented: choose color
3. [E100-PT1™ Standard Set], [E100-PT1™ Fast Set] or [E100-UV1™] with REFLECTOR™ Enhancer additive
4. [E100-PT1™ Standard Set or [E100-PT1™ Fast Set] as clear coat

#### REFS – CTP

1. E100-VB5™ (optional two coats)
2. E100-PT4™ Pigmented: choose color
3. [E100-PT1™ Standard Set], [E100-PT1™ Fast Set] or [E100-UV1™] with REFLECTOR™ Enhancer additive
4. [E100-PT1™ Standard Set or [E100-PT1™ Fast Set] as clear coat
5. [AUS-V™ without AGG] or [AUS-V™ with AGG]

### LIMITATIONS

REFLECTOR™ Enhancer Flooring System must only be used on interior concrete that is well drained and is not subject to hydrostatic pressure.

Concrete must be structurally sound and free of curing membrane, paint or sealer. For any preparation or application questions, contact a technical representative.

For additional abrasion and chemical resistance, apply one of several urethane top coats with the AGG additive. The coefficient of friction values can be adjusted to meet virtually any requirements. Typical COF ranges from 0.50 to 0.80.

### GUIDELINES for COEFFICIENT OF FRICTION

- ADA Flat Surfaces 0.60
- ADA Inclined Surfaces 0.80
- OSHA 0.50
- NFPA 0.68

### PHYSICAL PROPERTIES (varies based on system components)

|  | Test Method  | Test Result                    |
|--|--------------|--------------------------------|
| VOC Content  | N/A          | 0 to 20 g/l                    |
| Toxicity   | N/A          | None - FDA and USDA Acceptable |
| Heat Distortion Temperature                                | ASTM D-648   | 130° F                         |
| Shore D Hardness   | ASTM D-2240  | 82 to 90 - 7 days              |
| Compressive Strength                                       | ASTM D-695   | 11,900 to 17,000 psi           |
| Tensile Strength   | ASTM D-638   | 2,100 to 6,400 psi             |
| Abrasion Resistance<br>CS-17 Wheel, 1KG Load, 1,000 cycles | ASTM D-4060  | .09 to 30 mg loss              |
| Flexural Strength  | ASTM D-790   | 6,200 to 6,500 psi             |
| Slant Shear  | ASTM C-882   | 100% Concrete Failure          |
| Water Absorption<br>2 Hour Boil                            | ASTM D-570   | 0.03 to 0.05 %                 |
| Flammability   | ASTM D-635   | Self-Extinguishing             |
| Flame Spread<br>NFPA 101                                   | ASTM E-84    | Class A                        |
| Elongation at Break  | ASTM D-638   | 4.1 to 7.3 %                   |
| Indentation  | Mil D 3134 F | 0.025 max                      |
| Impact Resistance  | Mil D 3134 F | 16.5ft. lbs. Pass              |

# Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 1/23/2015

Revision: 1/23/2015

**Trade Name: REFLECTOR™ Enhancer Additive**

## 1 Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

Trade Name: REFLECTOR™ Enhancer Additive

### 1.2 Article No.: REFLECTOR™ Enhancer Additive

### 1.3 Details of the supplier of the Safety Data Sheet Manufacturer:

Elite Crete Systems  
1151 Transport Drive  
Valparaiso, IN 46383  
Toll Free: 888.323.4445  
Tel: (219) 465-7671  
Fax: (219) 531-0898  
[www.elitecrete.com](http://www.elitecrete.com)

### 1.4 Emergency telephone number:

CHEMTREC US DOMESTIC: (800-424-9300)  
CHEMTREC INTERNATIONAL: (703-527-3887)

## 2 Hazards identification

### 2.1 Classification of the substance or mixture

**GHS Classification in accordance with CFR 1910 (OSHA HCS)**

The product is not classified as hazardous according to EU parliament and councils directive 1999/45/EC.

### 2.2 Label elements

**Labeling according to Regulation (EC) No 1272/2008:****Contains:** Mica, tio2, various other pigments**Hazard pictograms:****GHS08****Signal Word:** Warning**Hazard Statements:** Suspected of causing cancer**Precautionary Statements:****Prevention**

|      |  |
|------|--|
| P201 | Obtain special instructions before use                                   |
| P202 | Do not handle until all safety precautions have been read and understood |
| P281 | Use personal protective equipment as required                            |

**Response**

|             |   |
|-------------|---|
| P308 + P313 | IF exposed or concerned: Get medical advice/attention |
|-------------|---|

**Storage**

|      |                 |
|------|-----------------|
| P405 | Store locked up |
|------|-----------------|

**Disposal**

|      |  |
|------|--|
| P501 | Dispose of contents/ container to an approved waste disposal plant |
|------|--|

**Hazards not otherwise classified (HNOC)**

No information available

**Unknown acute toxicity**

No information available



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Revision: 1/23/2015

**Trade Name: REFLECTOR™ Enhancer Additive**

## 3 Composition/information on ingredients

### 3.2 Mixture.

**Description:** Mixture of substances listed below with nonhazardous additives.

**Hazardous components:**

| Identification #                   | Description   | WT. %  |
|------------------------------------|---|--|
| CAS: 108-05-4<br>EC No: Index No.: | <b>Fe<sub>2</sub>O<sub>3</sub></b><br>Classification (EC1272/2008)<br>Not hazardous | Classification (67/548/EEC)<br>Not hazardous |
| CAS: 1309-37-1                     | <b>Diiron Trioxide</b><br>Classification (EC1272/2008)<br>Not hazardous             | Classification (67/548/EEC)<br>Not hazardous |
| CAS 13463-67-7                     | <b>Titanium Dioxide</b><br>Classification (EC1272/2008)<br>Not hazardous            | Classification (67/548/EEC)<br>Not hazardous |
| CAS 65997-17-3                     | <b>Glass Oxide</b><br>Classification (EC1272/2008)<br>Not hazardous                 | Classification (67/548/EEC)<br>Not hazardous |
|                                    |   | 38-44%                                       |
|                                    |   | 5-25%  |
|                                    |   | 18-24%                                       |
|                                    |   | 39-51%                                       |

**Additional information:** Balance of other ingredients are non-hazardous or less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers). Additional H statements see Sec 16.

## 4 First aid measures

### 4.1 Description of first aid measures

#### After inhalation:

If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if breathing difficulty continues. DO NOT INDUCE VOMITING

#### After eye contact:

If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Seek medical attention.

#### After swallowing:

If product is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents. Give large amounts of water or milk to a CONSCIOUS PERSON. **Never give (milk or water) to someone who is unconscious**, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or MSDS with the victim to the health professional.

#### After skin contact:

Wash skin thoroughly after handling. Seek medical attention if irritation develops and persists. Remove contaminated clothing. Launder contaminated clothing before re-use.

#### After eye contact:

If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Seek medical attention.

### 4.2 Most important symptoms and effects, both acute and delayed.

**Acute:** This material may cause irritation to skin and eyes. Product may cause an allergic skin reaction.

**Chronic:** Prolonged or repeated skin contact may cause skin reaction product can be removed with water wash exposed skin thoroughly. Seek medical attention if symptoms arise. .

**Hazards:** Pre-existing skin or eye problems may be aggravated by exposure to this product.

### 4.3 Indication of any immediate medical attention and special treatment needed:

Treat symptoms and reduce over-exposure.

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**Trade Name: REFLECTOR™ Enhancer Additive**

## 5 Firefighting measures

### 5.1 Extinguishing media

**Suitable extinguishing agents:** Use fire-extinguishing media appropriate for surrounding materials.

### 5.2 Special hazards arising from the substance or mixture:

Not a fire or explosion hazard.

**Hazardous decomposition products:** None known.

### 5.3 Advice for Firefighters:

Use standard Protective equipment for firefighters appropriate for surrounding materials.

## 6 Accidental release measures

**6.1 Personal precautions, protective equipment and emergency procedures:** Personnel should be trained for spill response operations.

**6.2 Environmental precautions:** All work practices must be aimed at eliminating environmental contamination.

**6.3 Methods and material for containment and cleaning up:** sweep up or vacuum up material do not create airborne dust. Wear self contained safety face mask during use or clean up.

## 7 Handling and storage

### 7.1 Precautions for safe handling

As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid breathing dust/vapors generated by this product. **Use in a well-ventilated location or provide good ventilation before use.** Remove contaminated clothing immediately.

### 7.2 Conditions for safe storage, including any incompatibilities

#### Storage:

#### Requirements to be met by storerooms and receptacles:

Provide good ventilation and avoid contact with skin and eyes. Good general housekeeping procedure should be followed. Do not eat drink or smoke while using the material. Emergency showers should be readily available. Avoid contact with skin eyes. Do not inhale dust wear appropriate breathing equipment. Contact with eyes or skin may be irritating. Use only with good ventilation and PPE. Keep container closed when not in use.

**7.3 Specific end use(s):** use within the time period as recommended on the technical data sheet.

## 8 Exposure controls/personal protection

### Additional information about design of technical facilities:

Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above. Use local exhaust ventilation to control airborne dust. Ensure eyewash/safety shower stations are available near areas where this product is used.

### 8.1 Control parameters

#### Ingredients with limit values that require monitoring at the workplace:

Currently, International exposure limits are not established for the components of this product. Please check with competent authority in each country for the most recent limits in place.

### 8.2 Exposure controls

#### Personal protective equipment:

#### General protective and hygienic measures:

*The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of*

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Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.



**Respiratory protection:** Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

**Protection of hands:** Use chemical resistant gloves to prevent skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.

Protective gloves

### Material of gloves:

The selection of suitable gloves does not only depend on the material, but also on the quality, and varies from manufacturer to manufacture. Nitrile gloves are a good choice for using this product.

### Penetration time of glove material:

The exact break through time has to be determined by the manufacturer of the protective gloves. DO NOT exceed the breakthrough time set by the Manufacturer.



**Eye protection:** Safety glasses or chemical goggles as a minimum to prevent eye contact. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards. Alternatively a totally self contained face mask meeting NIOSH standards is highly recommended when using this product.



### Tightly sealed goggles

Self container respirator



### Body Protection:

Use body protection appropriate to prevent contact (e.g. lab coat, overalls). If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards.

Exposure guidelines:

## 9 Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### General Information

#### Appearance:

Form:

Powder

Color:

Various (black, gray, red ,yellow, blue, green, etc.)

Odor:

Odorless

Odor threshold:

|                                 |                    |
|---------------------------------|--------------------|
| pH-value:                       | 6.0 – 9.0 (4% H2O) |
| Change in condition             | N/A                |
| Melting point/Melting range:    | N/A                |
| Boiling point/Boiling range:    | N/A                |
| Flash point:                    | N/A                |
| Flammability (solid, gaseous):  | No data available  |
| Auto/Self-ignition temperature: | N/A                |
| Decomposition temperature:      | No data available  |
| Self-igniting:                  | No data available  |
| Danger of explosion:            | N/A                |

# Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 1/23/2015

Revision: 1/23/2015

## Trade Name: REFLECTOR™ Enhancer Additive

### Explosion limits

Lower + Upper: Not established

### Vapor pressure at:

Not established

### Bulk Density at 20°C:

2.8-2.9 kg/L

### Vapor pressure:

N/A

### Vapor density:

N/A

### Evaporation rate:

N/A

### Solubility in / Miscibility with Water:

Insoluble

### Specific Gravity 23 C: (Water = 1):

N/A

### Viscosity:

#### Dynamic:

No data available

#### Kinematic:

No data available

### Solvent content:

#### Organic solvents:

No data available

#### VOC (EC)

0.0 g/l

### 9.2 Other information

No data available

## 10 Stability and reactivity

**10.1 Reactivity:** No data available

**10.2 Chemical stability:** Product is stable under normal temperature conditions

**Thermal decomposition:** Can release carbon monoxide/ carbon dioxide

**/ conditions to be avoided:** None known

**10.3 Possibility of hazardous reactions:** None known

**10.4 Conditions to avoid:** None Known

**10.5 Incompatible materials:** None known

**10.6 Hazardous decomposition products:** None known

## 11 Toxicological information

### 11.1 Information on toxicological effects:

No data available regarding the product itself

## 12 Ecological information

### 12.1 Toxicity

No data available



## Safety Data Sheet

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**Trade Name: REFLECTOR™ Enhancer Additive**

### 13 Disposal considerations

#### 13.1 Waste treatment methods

**Recommendations:**

Waste disposal must be in accordance with appropriate Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan. Recommended to contact local licensed professional waste disposal service.

**RCRA WASTE CODE:** None Listed

**EU WASTE CODE:** Not Listed

### 14 Transport information

|  |  |
|--|--|
| <b>14.1 UN-Number</b><br><b>IMDG:</b><br><b>ADR, DOT, IATA, TGD</b>                            | NO UN NUMBER REQUIRED NON HAZARDOUS IN ALL RESPECTS<br>NOT REGULATED, NOT DANGEROUS GOODS                                |
| <b>14.2 UN proper shipping name</b><br><b>ADR, IMDG, IATA: DOT: TGD</b>                        | NOT REGULATED, NOT DANGEROUS GOODS   |
| <b>14.3 Transport hazard class(es)</b><br><b>DOT</b><br><b>Class:</b><br><b>Label:</b>         | NONE   |
| <b>ADR, IMDG, IATA</b><br><b>Class:</b><br><b>Label:</b>                                       | NONE   |
| <b>IMDG</b><br><b>Class:</b><br><b>Label:</b>  | NONE   |
| <b>IATA</b><br><b>Class:</b><br><b>Label:</b>  | NONE   |
| <b>14.4 Packing group</b><br><b>DOT, ADR, IMDG, IATA:</b>                                      | NONE   |
| <b>14.5 Environmental hazards:</b><br><b>Marine pollutant:</b>                                 | This products ingredients are not classified by the DOT as a Marine Pollutant (as defined by 49 CFR 172.101, Appendix B) |
| <b>14.6 Special precautions for user</b><br><b>Danger code (Kemler):</b><br><b>EMS Number:</b> | No data available<br>No data available   |
| <b>14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:</b>           | No data available  |
| <b>Transport/Additional information</b>  |  |
| <b>ADR</b><br><b>Tunnel restriction code</b>   | No data available  |
| <b>UN "Model Regulation":</b>  | No data available  |

### 15 Regulatory information

#### 15.1 Safety, health and environmental regulations/legislation specific for the substance or

# Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 1/23/2015

Revision: 1/23/2015

## Trade Name: REFLECTOR™ Enhancer Additive

### mixture. United States (USA)

**SARA:** This product is not subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act.: None

**Section 355 (extremely hazardous substances):** None of the ingredients are listed.

**Section 313 (Toxic Release Inventory):** None of the ingredients are listed.

**TSCA (Toxic Substances Control Act):** All ingredients are listed.

### Proposition 65 (California):

#### Chemicals known to cause cancer:

None of the ingredients is listed.

### Canada

#### Canadian Domestic Substances List (DSL):

All ingredients are listed

#### Canadian Ingredient Disclosure list (limit 0.1%):

None of the ingredients are listed.

#### Canadian Ingredient Disclosure list (limit 1%):

None of the ingredients are listed.

**15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### HMIS rating:

Health 0

Flammability 1

Reactivity 0

## 16 Other information

### Relevant phrases:

**Signal Word:** Caution

### Hazard Statements:

H318 May cause respiratory irritation.

### Precautionary Statements:

P102 Keep out of reach of children.  
 P280 Wear protective gloves/protective clothing/eye protection/face protection.  
 P261 Avoid breathing dust.  
 P302+352 IF ON SKIN: wash with plenty of soap and water.  
 P305 +351+338. IF IN EYES: rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.  
 P402 +404 Store in a dry place. Store in a closed container.  
 P501 Dispose of contents/container in accordance with local regulations.

### Supplementary precautionary Statements:

P271 Use only outdoors or in well-ventilated area.  
 P264 Wash contaminated skin thoroughly after handling.  
 P304+340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
 P333+313 If skin irritation or rash OCCURS: get medical advice/attention.  
 P361 Remove/take off immediately all contaminated clothing.  
 P362 Take off contaminated clothing before reuse.  
 P403+233 Store in well-ventilated place. Keep container tightly closed.

### Abbreviations and acronyms:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road  
 IMDG: International Maritime Code for Dangerous Goods  
 DOT: US Department of Transportation.

## Safety Data Sheet

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Printing Date: 1/23/2015

Revision: 1/23/2015

### Trade Name: REFLECTOR™ Enhancer Additive

IATA: International Air Transport Association.  
ACGIH: American Conference of Governmental Industrial Hygienists.  
EINECS: European Inventory of Existing Commercial Chemical Substances.  
ELINCS: European List of Notified Chemical Substances.  
CAS: Chemical Abstracts Service (division of the American Chemical Society).  
NFPA: National Fire Protection Association (USA).  
HMIS: Hazardous Materials Identification System (USA).  
LC50: Lethal concentration, 50 percent.  
LD50: Lethal dose, 50 percent.

# Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/28/2014

Revision: 10/28/2014

**Trade Name: E100-PT1™ CRYSTAL CLEAR EPOXY – Part A**

## 1 Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

Trade Name: E100-PT1™ Part A

### 1.2 Article No.: E100-PT1™ Part B

### 1.3 Details of the supplier of the Safety Data Sheet Manufacturer:

Elite Crete Systems  
1151 Transport Drive  
Valparaiso, IN 46383  
Toll Free: 888.323.4445  
Tel: (219) 465-7671  
Fax: (219) 531-0898  
[www.elitecrete.com](http://www.elitecrete.com)

### 1.4 Emergency telephone number:

CHEMTREC US DOMESTIC: (800-424-9300)  
CHEMTREC INTERNATIONAL: (703-527-3887)

## 2 Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification according to Regulation (EC) No 1272/2008 and GHS:

The following Hazard Statements are applicable only to the EU regulations and not the US GHS regulation: H361fd, H411.

The following Hazard Statements are applicable only according to OSHA regulations within the United States. These Statements are not applicable for the CLP regulation (1272/2008/EC) in the EU: H361.

Skin Irrit. 2 H-315: Causes skin irritation  
Eye Damage 1; H318: Causes serious eye damage.



GHS09 environment

Aquatic Chronic 2; H411: Toxic to aquatic life with long lasting effects.



GHS07 exclamation mark

Acute Tox. 2; H302: Harmful if swallowed.  
Skin Sensitization 1; H317: May cause an allergic skin reaction. STOT SE 3; H335: May cause respiratory irritation.

#### Classification according to Directive 67/548/EEC or Directive 1999/45/EC:

Xn; Harmful. R22-62: Harmful if swallowed. Possible risk of impaired fertility. Xi; Sensitizing. R43: May cause sensitization by skin contact

Xi; Irritant. R37: Irritating to respiratory system. R22-48: Harmful if swallowed.

N; Dangerous for the environment. R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

#### Information concerning particular hazards for human and environment:

The product has to be labeled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

#### Classification system:

The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

# Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/28/2014

Revision: 10/28/2014

**Trade Name: E100-PT1™ CRYSTAL CLEAR EPOXY – Part A**

## 2.2 Label elements

Labeling according to Regulation (EC) No 1272/2008:

Hazard pictograms:



GHS07 GHS09

**Signal Word: Warning**

**Hazard-determining components of labeling:**

Bisphenol A based Epoxy Resin, Alkyl C-12-C-14 Glycidyl Ether

**Hazard statements**

H312: Harmful in contact with skin

H317: May cause an allergic skin reaction

H412: Harmful to aquatic life with long lasting effects

**Precautionary statements**

P264: Wash hands thoroughly after handling

P270: Do not eat, drink or smoke when using this product

P271: Use only in well ventilated area.

P273: Avoid release to the environment

P280: Wear protective gloves/protective clothing/eye protection/face protection

P337+P313: If eye irritation persists: Get medical advice/attention.

P370+P378: In case of fire: Use for extinction: CO2, powder or water spray.

P302+P352: IF ON SKIN: Wash with plenty of soap and water.

P391: Collect spillage.

P403+P235: Store in a well-ventilated place. Keep cool.

P501: Dispose of contents/container in accordance with local/regional/national/international regulations

## 2.3 Other hazards

**Results of PBT and vPvB assessment:**

**PBT:** Not applicable.

**vPvB:** Not applicable.

**Hazard description:**

**Canadian WHMIS Classification:** This product is categorized as a Class D Division 2B Materials causing other toxic effects, as per the Controlled Product Regulations

**WHMIS-symbols:**



**NFPA ratings (scale 0 - 4)**



Health = 2  
Fire = 1  
Reactivity = 0

**HMIS-ratings (scale 0 - 4)**

|            |   |
|------------|---|
| Health     | 2 |
| Fire       | 1 |
| Reactivity | 0 |

Health = 2  
Fire = 1  
Reactivity = 0

## 2.3 Other hazards

**No known**

# Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/28/2014

Revision: 10/28/2014

**Trade Name: E100-PT1™ CRYSTAL CLEAR EPOXY – Part A**

## 3 Composition/information on ingredients

### 3.2 Mixture.

**Description:** Mixture of substances listed below with nonhazardous additives.

**Hazardous components:**

| Identification #                                       | Description   | WT. %    |
|--|---|----------|
| CAS: 25085-99-8<br>EINECS: Not Listed<br>Index Number: | <b>Bisphenol A based Epoxy Resin</b><br>HAZARD CLASSIFICATION: [Xn] Harmful, [Xi] Irritant<br>RISK PHRASES: R21, R34, R43, R52/53 | < 85-92% |
| CAS: 68609-97-2<br>EINECS: 271-846-8<br>Index Number;  | <b>Alkyl C-12-C-14 Glycidyl Ether</b><br>Skin Irritant 1, Skin Sens. 1, Muta. 2; Aquatic Chronic 2; R 43; Xi 38; R 38, R43.       | < 8-15%  |

**Additional information:** Balance of other ingredients are non-hazardous or less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers).

## 4 First aid measures

### 4.1 Description of first aid measures

#### After inhalation:

If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if breathing difficulty continues.

#### After skin contact:

Wash skin thoroughly after handling. Seek medical attention if irritation develops and persists. Remove contaminated clothing. Launder contaminated clothing before re-use.

#### After eye contact:

If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Seek medical attention.

#### After swallowing:

If product is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or MSDS with the victim to the health professional.

### 4.2 Most important symptoms and effects, both acute and delayed.

**Acute:** This material may cause irritation to skin and eyes. Product may cause an allergic skin reaction.

**Chronic:** Prolonged or repeated skin contact may cause allergic skin reaction or dermatitis.

**Target Organs:**      **Acute:** Eye, Skin      **Chronic:** Skin

**Hazards:** Pre-existing skin or eye problems may be aggravated by exposure to this product.

### 4.3 Indication of any immediate medical attention and special treatment needed:

Treat symptoms and reduce over-exposure.

## 5 Firefighting measures

### 5.1 Extinguishing media

**Suitable extinguishing agents:** Carbon dioxide, foam, dry chemical, halon, water spray, sand, limestone powder.

### 5.2 Special hazards arising from the substance or mixture:

This product is a flammable liquid above flash point shown.

### 5.3 Advice for firefighters:

Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.



## Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/28/2014

Revision: 10/28/2014

**Trade Name: E100-PT1™ CRYSTAL CLEAR EPOXY – Part A**

### 6 Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures:** Personnel should be trained for spill response operations.
- 6.2 Environmental precautions:** All work practices must be aimed at eliminating environmental contamination.
- 6.3 Methods and material for containment and cleaning up:** Evacuate area. Contain spill if safe to do so. Prevent entry into drains, sewers, and other waterways. Soak up spilled material with an absorbent material and pick up and place in an appropriate waste container for disposal. Do not mix with other wastes. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations).

### 7 Handling and storage

#### 7.1 Precautions for safe handling

As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid breathing vapors/mists generated by this product. Use in a well-ventilated location. Remove contaminated clothing immediately.

#### 7.2 Conditions for safe storage, including any incompatibilities

##### Storage:

##### Requirements to be met by storerooms and receptacles:

Store between 10 and 50 °C (45 -125 °F) and avoid contact with skin and eyes. Do not store near acids or amines. Ground all transfer equipment. Good general housekeeping procedure should be followed. Do not eat drink or smoke while using the material. Emergency showers should be readily available. Material may partially freeze in cold temperatures which will result in crystals and haziness. If this occurs rewarm and homogenize. Avoid contact with skin eyes. Vapors may irritate eyes and will irritate the skin. Use only with good ventilation and PPE. Keep container closed when not in use.

#### 7.3 Specific end use(s): No information

### 8 Exposure controls/personal protection

#### Additional information about design of technical facilities:

Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above. Use local exhaust ventilation to control airborne vapor. Ensure eyewash/safety shower stations are available near areas where this product is used.

#### 8.1 Control parameters

##### Ingredients with limit values that require monitoring at the workplace:

Currently, International exposure limits are not established for the components of this product. Please check with competent authority in each country for the most recent limits in place.

#### 8.2 Exposure controls

##### Personal protective equipment:

##### General protective and hygienic measures:

*The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.*

**Respiratory protection:** Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

# Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/28/2014

Revision: 10/28/2014

## Trade Name: E100-PT1™ CRYSTAL CLEAR EPOXY – Part A

**Protection of hands:** Use chemical resistant gloves to prevent skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.

Protective gloves



### Material of gloves:

The selection of suitable gloves does not only depend on the material, but also on the quality, and varies from manufacturer to manufacturer.

### Penetration time of glove material:

The exact break through time has to be determined by the manufacturer of the protective gloves. DO NOT exceed the breakthrough time set by the Manufacturer.



**Eye protection:** Safety glasses or chemical goggles as appropriate to prevent eye contact. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.

Tightly sealed goggles

### Body Protection:

Use body protection appropriate to prevent contact (e.g. lab coat, overalls). If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards.

## 9 Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### General Information

#### Appearance:

Form:

Liquid

Color:

Clear – Slight amber haze

Odor:

Mild epoxy odor

Odor threshold:

Not Available

pH-value:

Not Available

#### Change in condition

Melting point/Melting range:

No data available

Boiling point/Boiling range:

>200°C

Flash point:

>392°F (>200°C)

Flammability (solid, gaseous):

No data available

Auto/Self-ignition temperature:

Not established

Decomposition temperature:

No data available

Self-igniting:

No data available

Danger of explosion:

This product is a flammable liquid above flash point shown above.

#### Explosion limits

Lower:

Not established

Upper:

Not established

Vapor pressure at 25 °C:

<0.1 mmHg

Density at 20°C:

9.45 lbs. per gallon, specific gravity 1.13

Relative density:

No data available

## Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/28/2014

Revision: 10/28/2014

### Trade Name: E100-PT1™ CRYSTAL CLEAR EPOXY – Part A

|   |                   |
|---|-------------------|
| Vapor density:                          | No data available |
| Evaporation rate:                       | No data available |
| Solubility in / Miscibility with Water: | Not Available     |
| Specific Gravity 20oC: (Water = 1):     | Not Available     |
| Viscosity:                              |                   |
| Dynamic:                                | No data available |
| Kinematic:                              | No data available |
| Solvent content:                        |                   |
| Organic solvents:                       | No data available |
| VOC (EC)                                | No data available |
| 9.2 Other information                   | No data available |

## 10 Stability and reactivity

### 10.1 Reactivity

### 10.2 Chemical stability: Product is stable

**Thermal decomposition / conditions to be avoided:** When heated to decomposition this product produces noxious gases such as CO, CO<sub>2</sub>, hydrocarbons and soot.

### 10.3 Possibility of hazardous reactions: No data available

### 10.4 Conditions to avoid: Contact with incompatible materials

### 10.5 Incompatible materials: Oxidizing agents and amines should be avoided as these will cause exothermic polymerization. Avoid extreme heat

### 10.6 Hazardous decomposition products: Will not occur

## 11 Toxicological information

### 11.1 Information on toxicological effects: Toxicity data is available for this product

#### Acute toxicity:

|              |       |               |        |
|--------------|-------|---------------|--------|
| Acute Dermal | LD 50 | >20,000 mg/kg | Rabbit |
| Acute Oral   | LD 50 | >5,000 mg/kg  | Rat    |

**Primary irritant effect:** Contact with this product can be irritating to exposed skin and eyes.

**Sensitization:** This product is considered a skin sensitizer.

#### Additional toxicological information:

None of the ingredients are found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, IARC and therefore is not considered to be, nor suspected to be a cancer-causing agent by these agencies.

#### Reproductive toxicity information:

No information concerning the effects of this product and its components on the human reproduction system.

# Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/28/2014

Revision: 10/28/2014

**Trade Name: E100-PT1™ CRYSTAL CLEAR EPOXY – Part A**

## 12 Ecological information

### 12.1 Toxicity

**Aquatic toxicity:** No evidence is currently available on this product's effects on aquatic life.

**Component Data:** CAS# 25085-99-8

Fathead Minnow LC50 3 mg/l 96 h

Toxicity to daphnia magna EC50 1.4 -1.7 mg/l 24 h

Bacteria: IC50 >42.6 mg/l 18 h

Biodegradation: 28 days 12% OECD

Bioaccumulation: Not readily biodegradable

**12.2 Persistence and degradability:** No data available

**12.3 Bio accumulative potential:** No data available

**12.4 Mobility in soil:** No evidence is currently available on this product's effects on plants or animals.

**Ecotoxicological effects:**

**Remark:**

**Additional ecological information:** No data available

**General notes:** No specific data is available for this product, however this product is expected to be readily biodegradable

## 13 Disposal considerations

### 13.1 Waste treatment methods

**Recommendations:**

Waste disposal must be in accordance with appropriate Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan.

**RCRA WASTE CODE:** None Listed

**EU WASTE CODE:** Not Listed

## 14 Transport information

### 14.1 UN-Number

**DOT: CAN:**

NOT REGULATED

**ADN: ADR: IMDG: IATA:**

UN 3082

### 14.2 UN proper shipping name

**DOT: CAN:**

NOT REGULATED

**ADN: ADR: IMDG: IATA:**

Environmentally Hazardous Substance liquid,  
N.O.S. (Bisphenol A epoxy resin)

### 14.3 Transport hazard class(es)

**DOT: CAN:**



**ADR: ADN: IMDG: IATA**



### 14.4 Packing group

**DOT: CAN:**

NOT REGULATED

**ADN: ADR: IMDG :IATA**

PG III

## Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/28/2014

Revision: 10/28/2014

### Trade Name: E100-PT1™ CRYSTAL CLEAR EPOXY – Part A

#### 14.5 Environmental hazards

Product contains environmentally hazardous substances: reaction Products of Epichlorohydrin and Bisphenol A)

Marine Pollutant:

YES

Special Marking (ADR):



Notes: marine pollutant (IMDG code 2.9.3). For air transport, see special provision A97. (ICAO/IATA). **For surface shipments within the USAL Not Regulated.**

#### 14.6 Special precautions for user

Danger code (Kemler):

NOT APPLICABLE

EMS Number:

#### 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:

NOT APPLICABLE

#### Transport/Additional information

ADR

Tunnel restriction code

NOT APPLICABLE

UN "Model Regulation":

NOT APPLICABLE

## 15 Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture. United States (USA)

**SARA:** This product is not subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act.: None

**Section 355 (extremely hazardous substances):** None of the ingredients are listed.

**Section 313 (Toxic Release Inventory):** None of the ingredients are listed.

**TSCA (Toxic Substances Control Act):** All ingredients are listed.

### Proposition 65 (California):

**Chemicals known to cause cancer:**

None of the ingredients is listed.

### Canada

**Canadian Domestic Substances List (DSL):**

All ingredients are listed

**Canadian Ingredient Disclosure list (limit 0.1%):**

None of the ingredients are listed.

**Canadian Ingredient Disclosure list (limit 1%):**

None of the ingredients are listed.

**15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/28/2014

Revision: 10/28/2014

**Trade Name: E100-PT1™ CRYSTAL CLEAR EPOXY – Part A**

### 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

**Relevant phrases:**

H312: Harmful in contact with skin

H317: May cause an allergic skin reaction

H412: Harmful to aquatic life with long lasting effects

R21: Harmful in contact with skin

R34: Causes burns

R43: May cause sensitization by skin contact.

R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

**Abbreviations and acronyms:**

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation.

IATA: International Air Transport Association.

ACGIH: American Conference of Governmental Industrial Hygienists.

EINECS: European Inventory of Existing Commercial Chemical Substances.

ELINCS: European List of Notified Chemical Substances.

CAS: Chemical Abstracts Service (division of the American Chemical Society).

NFPA: National Fire Protection Association (USA).

HMIS: Hazardous Materials Identification System (USA).

LC50: Lethal concentration, 50 percent.

LD50: Lethal dose, 50 percent.



# Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/20/2014

Revision: 10/20/2014

## Trade Name: E100-PT1™ – Crystal Clear Epoxy – Part B

### 1 Identification of the substance/mixture and of the company/undertaking

#### 1.1 Product identifier

Trade Name: E100-PT1™ Part B

#### 1.2 Article No.: E100-PT1™ Part B

#### 1.3 Details of the supplier of the Safety Data Sheet Manufacturer:

Elite Crete Systems  
1151 Transport Drive  
Valparaiso, IN 46383  
Toll Free: 888.323.4445  
Tel: (219) 465-7671  
Fax: (219) 531-0898  
[www.elitecrete.com](http://www.elitecrete.com)

#### 1.4 Emergency telephone number:

CHEMTREC US DOMESTIC: (800-424-9300)  
CHEMTREC INTERNATIONAL: (703-527-3887)

### 2 Hazards identification

#### 2.1 Classification of the substance or mixture

##### Classification according to Regulation (EC) No 1272/2008 and GHS:

Reproductive Toxicity Category 2  
Acute Inhalation Toxicity Category 4  
Acute Oral Toxicity Category 4  
Skin Sensitization Category 1  
Skin Corrosion/Irritation Category 2  
Acute Aquatic Toxicity Category 1  
Chronic Aquatic Toxicity Category 2

##### Classification according to Directive 1999/45/EC:



C; Corrosive.



R34: Causes burns.



Xn; Harmful.



R22: harmful if swallowed.



Xi; Sensitizing.



R43: May cause sensitization by skin contact.



N; Dangerous for the environment



R50: Very toxic to aquatic organisms.

##### Information concerning particular hazards for human and environment:

The product has to be labeled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

##### Classification System:

The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

The classification is in accordance with the latest editions of international substances lists, and is supplemented by information from technical literature and by information provided by the company.

#### 2.2 Label elements

##### Labeling according to Regulation (EC) No 1272/2008:

# Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/20/2014

Revision: 10/20/2014

## Trade Name: E100-PT1™ – Crystal Clear Epoxy – Part B

### Hazard pictograms:



GHS05    GHS07    GHS08    GHS09

**Signal Word:** Danger

### Hazard-determining components of labeling:

Contains: Benzene- 1,3-Diamethanamine, Trimethylhexamine-1,6-Diamine. May produce and allergic skin reaction.

### Hazard statements:

- H361: Suspected of damaging fertility or the unborn child.
- H302 Harmful if swallowed.
- H332: Harmful inhaled.
- H315: Causes skin irritation.
- H317: May cause an allergic skin reaction.
- H400: Very toxic to aquatic life.
- H401: Very toxic to aquatic life with long lasting effects.

### Precautionary statements

- P260: Do not breath dust/fume/gas/mist/vapors/spray
- P264: Wash hands thoroughly after handling
- P270: Do not eat, drink or smoke when using this product
- P271: Use only in well ventilated area.
- P273: Avoid release to the Environment
- P280: Wear protective gloves/protective clothing/eye protection/face protection
- P337+P313: If eye irritation persists: Get medical advice/attention.
- P370+P378: In case of fire: Use for extinction: CO2, powder or water spray.
- P302+P352: IF ON SKIN: Wash with plenty of soap and water.
- P391: Collect spillage.
- P403+P235: Store in a well-ventilated place. Keep cool.
- P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

### Hazard description:

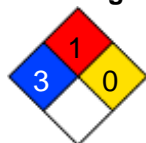
#### Canadian WHMIS Classification:

- D2B – Toxic material causing other toxic effects.
- E – Corrosive material

### WHMIS-symbols:



### NFPA ratings (scale 0 – 4)



Health = 3  
Fire = 1  
Reactivity = 0

### HMIS-ratings (scale 0 – 4)

|            |   |
|------------|---|
| Health     | 3 |
| Fire       | 1 |
| Reactivity | 0 |

Health = 3  
Fire = 1  
Reactivity = 0

### 2.3 Other hazards

No known

# Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/20/2014

Revision: 10/20/2014

## Trade Name: E100-PT1™ – Crystal Clear Epoxy – Part B

### 3 Composition/information on ingredients

#### 3.2 Mixture.

**Description:** Mixture of substances listed below with nonhazardous additives.

**Hazardous components:**

| Identification #                     | Description   | WT. %    |
|--------------------------------------|---|----------|
| CAS: 98-54-4<br>EINECS: 202-679-0    | <b>Paratertiarybutyphenol</b><br>HAZARD CLASSIFICATION: [C] Corrosive, [N] Dangerous to the Environment<br>RISK PHRASES: R34, R51/53  | 28– 35%  |
| CAS: 1477-55-0<br>EINECS: 216-032-5  | <b>Benzene-1,3-dimethanamine</b><br>HAZARD CLASSIFICATION: [C] Corrosive<br>RISK PHRASES: R34   | 20– 35%  |
| CAS: 25620-58-0<br>EINECS: 247-134-8 | <b>Trimethylhexamethylenediamine</b><br>HAZARD CLASSIFICATION: [Xn] Harmful<br>RISK PHRASES: R37, R43   | 12 – 30% |
| CAS: 25154-52-3<br>EINECS: 246-672-0 | <b>Nonyl Phenol</b><br>HAZARD CLASSIFICATION: Repr Cat 3, [Xn] Harmful, [C] Corrosive, [N] Dangerous to the Environment<br>RISK PHRASES: R22, R62, R63, R34, R50/53   | 1 – 5%   |
| CAS: 9046-10-0                       | <b>Alpha-(2-Aminomethyl)omega-(2-aminomethylethoxy)-poly(oxy)(methyl-1,2-ethanediyl)</b><br>HAZARD CLASSIFICATION: (Xn) Harmful<br>RISK PHRASES: R36/38; Xi R43; N51/53; Aquatic Chronic 3, H412; Skin Irrit. 1C, H314, Eye Irrit. 2, H319, Skin Sens 1, H317 | 10-20%   |

**Additional information:** Balance of other ingredients are non-hazardous or less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers).

### 4 First aid measures

#### 4.1 Description of first aid measures

##### After inhalation:

If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if breathing difficulty continues.

##### After skin contact:

Wash skin thoroughly after handling. Seek medical attention if irritation develops and persists. Remove contaminated clothing. Launder contaminated clothing before re-use.

##### After eye contact:

If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Seek medical attention if irritation develops.

##### After swallowing:

If product is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or MSDS with the victim to the health professional.

#### 4.2 Most important symptoms and effects, both acute and delayed.

**Acute:** This material is harmful if inhaled and may cause delayed lung injury. This material may cause irritation to the respiratory tract and skin and even burns. Product may cause an allergic skin reaction.

**Chronic:** Prolonged or repeated skin contact may cause dermatitis.

**Target Organs:** **Acute:** Eye, Respiratory System, Skin **Chronic:** Skin

**Hazards:** Pre-existing skin or respiratory system problems may be aggravated by exposure to this product.

#### 4.3 Indication of any immediate medical attention and special treatment needed:

Treat symptoms and reduce over-exposure.

## Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/20/2014

Revision: 10/20/2014

**Trade Name: E100-PT1™ – Crystal Clear Epoxy – Part B**

### 5 Firefighting measures

#### 5.1 Extinguishing media

**Suitable extinguishing agents:**

Carbon dioxide, foam, dry chemical, halon, water spray, sand, limestone powder.

#### 5.2 Special hazards arising from the substance or mixture:

This product is flammable above flash point indicated above.

#### 5.3 Advice for firefighters:

Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

### 6 Accidental release measures

**6.1 Personal precautions, protective equipment and emergency procedures:** Personnel should be trained for spill response operations.

**6.2 Environmental precautions:** All work practices must be aimed at eliminating environmental contamination.

**6.3 Methods and material for containment and cleaning up:** Contain spill if safe to do so. Prevent entry into drains, sewers, and other waterways. Soak up with a non-combustible absorbent material and place in an appropriate container for disposal. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations).

### 7 Handling and storage

#### 7.1 Precautions for safe handling

As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid breathing vapors/mists generated by this product. Use in a well-ventilated location. Remove contaminated clothing immediately.

#### 7.2 Conditions for safe storage, including any incompatibilities

**Storage:**

**Requirements to be met by storerooms and receptacles:**

Store between 5° and 300C and avoid contact with skin and eyes. Do not store near acids. Ground all transfer equipment. Hold bulk storage under a nitrogen blanket. This product should not come in contact with copper or copper-bearing alloys. Containers of this product must be properly labeled. Nitrogen purging of containers is ideal and good practice.

#### 7.3 Specific end use(s): No information

# Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

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**Trade Name: E100-PT1™ – Crystal Clear Epoxy – Part B**

## 8 Exposure controls/personal protection

### Additional information about design of technical facilities:

Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above.

Use local exhaust ventilation to control airborne vapor. Ensure eyewash/safety shower stations are available near areas where this product is used.

### 8.1 Control parameters

#### Ingredients with limit values that require monitoring at the workplace:

Currently, International exposure limits are not established for the components of this product. Please check with competent authority in each country for the most recent limits in place.

### 8.2 Exposure controls

#### Personal protective equipment:

##### General protective and hygienic measures:

*The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.*

**Respiratory protection:** Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

**Protection of hands:** Use chemical resistant gloves to prevent skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.



Protective gloves

#### Material of gloves:

The selection of suitable gloves does not only depend on the material, but also on the quality, and varies from manufacturer to manufacturer.

**Eye protection:** Safety glasses or chemical goggles as appropriate to prevent eye contact. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.



Safety goggles

#### Body Protection:

Use body protection appropriate to prevent contact (e.g. lab coat, overalls). If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards.

## 9 Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### General Information

##### Appearance:

**Form:**

Liquid

**Color:**

Clear pale straw color

**Odor:**

Mild epoxy odor

**Odor threshold:**

Not Available

**pH-value:**

Not Available

##### Change in condition

**Melting point/Melting range:**

No data available

**Boiling point/Boiling range:**

>392°F (200°C)

## Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/20/2014

Revision: 10/20/2014

### Trade Name: E100-PT1™ – Crystal Clear Epoxy – Part B

|   |   |
|---|---|
| Flash point:                            | >392°F (>200°C)   |
| Flammability (solid, gaseous):          | No data available   |
| Auto/Self-ignition temperature:         | Not established   |
| Decomposition temperature:              | No data available   |
| Self-igniting:                          | No data available   |
| Danger of explosion:                    | This product is a flammable liquid above flash point shown above. |
| Explosion limits                        |   |
| Lower:                                  | Not established   |
| Upper:                                  | Not established   |
| Vapor pressure at 20 °C:                | <0.1 mmHg @ 25°C  |
| Density at 20°C:                        | No data available   |
| Relative density:                       | 8.10 pounds per gallon @ 25°C (SP 0.972)                          |
| Vapor density:                          | No data available   |
| Evaporation rate:                       | No data available   |
| Solubility in / Miscibility with Water: | Not Available   |
| Specific Gravity 20oC: (Water = 1):     | Not Available   |
| Viscosity:                              |   |
| Dynamic:                                | No data available   |
| Kinematic:                              | No data available   |
| Solvent content:                        |   |
| Organic solvents:                       | No data available   |
| VOC (EC)                                | No data available   |
| 9.2 Other information                   | No data available   |

## 10 Stability and reactivity

### 10.1 Reactivity

### 10.2 Chemical stability: Product is stable

**Thermal decomposition / conditions to be avoided:** When heated to decomposition this product produces noxious gases such as CO, CO<sub>2</sub>, NO<sub>x</sub>, amines, ammonia and others.

### 10.3 Possibility of hazardous reactions: No data available

### 10.4 Conditions to avoid: Contact with incompatible materials

### 10.5 Incompatible materials: Oxidizing agents and amines should be avoided as these will cause exothermic polymerization. Avoid extreme heat

### 10.6 Hazardous decomposition products: Will not occur



# Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/20/2014

Revision: 10/20/2014

## Trade Name: E100-PT1™ – Crystal Clear Epoxy – Part B

### 11 Toxicological information

**11.1 Information on toxicological effects:** Toxicity data is available for this product

**Acute toxicity:**

|              |       |              |        |
|--------------|-------|--------------|--------|
| Acute Dermal | LD 50 | >2,000 mg/kg | Rabbit |
| Acute Oral   | LD 50 | 1,750 mg/kg  | Rat    |

**Primary irritant effect:** Contact with this product can be irritating to exposed skin, eyes and respiratory system.

**Sensitization:** This product is considered a skin sensitizer.

**Additional toxicological information:**

None of the ingredients are found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, IARC and therefore is not considered to be, nor suspected to be a cancer-causing agent by these agencies. CAS# 64742-53-6 is classified in the EU as a possible cancer causing material.

**Reproductive toxicity information:** No information concerning the effects of this product and its components on the human reproduction system.

### 12 Ecological information

**12.1 Toxicity**

**Aquatic toxicity:** No data available

**12.2 Persistence and degradability:** No data available

**12.3 Bioaccumulative potential:** No data available

**12.4 Mobility in soil:** No evidence is currently available on this product's effects on plants or animals.

**Ecotoxicological effects:**

**Remark:**

**Additional ecological information:** No data available

**General notes:**

**Component Information:**

nonyl phenol CAS# 25154-52-3

Acute Fish Toxicity 96 hr LC50 0.13 mg/l fathead minnow (Pimephales promelas)

48 hr EC50 0.19 mg/l Daphnia Magna

Harmful to aquatic organisms. May cause long term damage to environment

### 13 Disposal considerations

**13.1 Waste treatment methods**

**Recommendations:**

Waste disposal must be in accordance with appropriate Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan.

**RCRA WASTE CODE:** D002

**EU WASTE CODE:** To Be Established

# Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/20/2014

Revision: 10/20/2014

**Trade Name: E100-PT1™ – Crystal Clear Epoxy – Part B**

## 14 Transport information

### 14.1 UN-Number

DOT: CAN: ADN: IMDG: IATA: UN 2735  
ADR UN2735

### 14.2 UN proper shipping name

DOT: CAN: ADN: IMDG: IATA: Amines, Liquid, Corrosive, N.O.S. (Contains Benzene-1,3-Dimethanamine, Trimethylhexane-1,6-Diamine)  
ADR 2735 Amines, Liquid, Corrosive, N.O.S. (Contains Benzene-1,3-Dimethanamine, Trimethylhexane-1,6-Diamine)

### 14.3 Transport hazard class(es)

DOT: CAN: ADN: IMDG: IATA: 8 Corrosive substances

CLASS:

LABELS:



ADR:

CLASS:

8 (C7) Corrosive substances

LABELS:



### 14.4 Packing group

DOT: CAN: ADR: ADN: IMDG: IATA: PG II

### 14.5 Environmental hazards:

Marine pollutant: YES

Special marking (ADR)



### 14.6 Special precautions for user

Danger code (Kemler): Warning Corrosive substances  
EMS Number: 80 F-A,S-B

### 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:

No data available

### Transport/Additional information

#### ADR

Limited Quantities (LQ)  
Excepted Quantities (EQ)

5L  
Code E1  
Maximum net quantity per inner packaging 30 ml  
Maximum net quantity per outer packaging 1000ml

Transport category  
Tunnel restriction code

3  
E

### UN "Model Regulation":

UN2735 Amines, Liquid, Corrosive, N.O.S. (Contains Benzene-1,3-Dimethanamine, Trimethylhexane-1,6-Diamine), 8, II

## Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/20/2014

Revision: 10/20/2014

**Trade Name: E100-PT1™ – Crystal Clear Epoxy – Part B**

### 15 Regulatory information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture. United States (USA)**

**SARA:** This product is not subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act.: None

**Section 355 (extremely hazardous substances):** None of the ingredients are listed.

**Section 313 (Toxic Release Inventory):** None of the ingredients are listed.

**TSCA (Toxic Substances Control Act):** All ingredients are listed.

**Proposition 65 (California):**

**Chemicals known to cause cancer:**

None of the ingredients is listed.

**Canada**

**Canadian Domestic Substances List (DSL):**

All ingredients are listed

**Canadian Ingredient Disclosure list (limit 0.1%):**

None of the ingredients are listed.

**Canadian Ingredient Disclosure list (limit 1%):**

None of the ingredients are listed.

**15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

**Hazard statements:**

H361: Suspected of damaging fertility or the unborn child.

H302 Harmful if swallowed.

H332: Harmful inhaled.

H315: Causes skin irritation.

H317: May cause an allergic skin reaction.

H400: Very toxic to aquatic life.

H401: Very toxic to aquatic life with long lasting effects.

**Precautionary statements**

P260: Do not breathe dust/fume/gas/mist/vapors/spray

P264: Wash hands thoroughly after handling

P270: Do not eat, drink or smoke when using this product

P271: Use only in well ventilated area.

P273: Avoid release to the Environment

P280: Wear protective gloves/protective clothing/eye protection/face protection

P337+P313: If eye irritation persists: Get medical advice/attention.

P370+P378: In case of fire: Use for extinction: CO<sub>2</sub>, powder or water spray.

P302+P352: IF ON SKIN: Wash with plenty of soap and water.

P391: Collect spillage.

P403+P235: Store in a well-ventilated place. Keep cool.

P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

**Abbreviations and acronyms:**

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation.

IATA: International Air Transport Association.

ACGIH: American Conference of Governmental Industrial Hygienists.

EINECS: European Inventory of Existing Commercial Chemical Substances.

ELINCS: European List of Notified Chemical Substances.

CAS: Chemical Abstracts Service (division of the American Chemical Society).

NFPA: National Fire Protection Association (USA).

HMIS: Hazardous Materials Identification System (USA).

LC50: Lethal concentration, 50 percent.

LD50: Lethal dose, 50 percent.

# Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/22/2014

Revision: 10/22/2014

**Trade Name: E100-VB5™ - Epoxy Vapor Barrier – Part A****1 Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier**

Trade Name: E100-VB5™ Part A

**1.2 Article No.: E100-VB5™ Part A****1.3 Details of the supplier of the Safety Data Sheet Manufacturer:**

Elite Crete Systems  
1151 Transport Drive,  
Valparaiso, IN 46383  
Toll Free: 888.323.4445  
Tel: (219) 465-7671  
Fax: (219) 531-0898  
[www.elitecrete.com](http://www.elitecrete.com)

**1.4 Emergency telephone number:**

CHEMTREC US DOMESTIC: (800-424-9300)  
CHEMTREC INTERNATIONAL: (703-527-3887)

**2 Hazards identification****2.1 Classification of the substance or mixture**

Classification according to Regulation (EC) No 1272/2008 and GHS: Not Classified

Classification according to Directive 1999/45/EC: [Xn] Harmful, [N] Dangerous to the Environment

**Information concerning particular hazards for human and environment:****Product Description:** This product is a water –white – pale straw colored liquid with a mild epoxy odor.

Health Hazards: Mild to moderate eye, skin and respiratory system irritant. Harmful if swallowed. May cause skin sensitization

**Flammability Hazards:** This product is Flammable above its flash point of 340°F (170°C)**Reactivity Hazards:** None known.**Environmental Hazards:** The environmental effects of this product have not been investigated; however it is not expected to cause significant adverse effects.**Emergency Considerations:** Emergency responders must wear the proper personal protective equipment (and have appropriate fire-suppression equipment) suitable for the situation to which they are responding.**Classification system:**

The classification is according to the latest editions of the EU-lists, and extended by company and literature data

**2.2 Label elements**

Labeling according to Regulation (EC) No 1272/2008:

Hazard pictograms:



GHS07



GHS09

**Signal Word:** Warning**Hazard-determining components of labeling:** Bisphenol A based Epoxy Resin**Hazard statements**

H312: Harmful in contact with skin

H317: May cause an allergic skin reaction

# Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/22/2014

Revision: 10/22/2014

## Trade Name: E100-VB5™ - Epoxy Vapor Barrier – Part A

### Precautionary statements

P264: Wash hands thoroughly after handling  
 P270: Do not eat, drink or smoke when using this product  
 P271: Use only in well-ventilated area.  
 P273: Avoid release to the environment  
 P280: Wear protective gloves/protective clothing/eye protection/face protection  
 P337+P313: If eye irritation persists: Get medical advice/attention.  
 P370+P378: In case of fire: Use for extinction: CO2, powder or water spray.  
 P302+P352: IF ON SKIN: Wash with plenty of soap and water.  
 P391: Collect spillage.  
 P403+P235: Store in a well-ventilated place. Keep cool.  
 P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

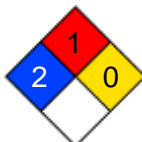
### Hazard description:

**Canadian WHMIS Classification:** This product is categorized as a Class D Division 2B Materials causing other toxic effects, as per the Controlled Product Regulations

### WHMIS-symbols:



### NFPA ratings (scale 0 - 4)



Health = 2  
 Fire = 1  
 Reactivity = 0

### HMIS-ratings (scale 0 - 4)

|            |   |
|------------|---|
| Health     | 2 |
| Fire       | 1 |
| Reactivity | 0 |

Health = 2  
 Fire = 1  
 Reactivity = 0

### 2.3 Other hazards

No known

## 3 Composition/information on ingredients

### 3.2 Mixture.

**Description:** Mixture of substances listed below with nonhazardous additives.

#### Hazardous components:

| Identification #                                       | Description   | WT. %  |
|--|---|--------|
| CAS: 25085-99-8<br>EINECS: Not Listed<br>Index Number: | <b>Bisphenol A based Epoxy Resin</b><br>HAZARD CLASSIFICATION: [Xn] Harmful, [Xi] Irritant<br>RISK PHRASES: R21, R34, R43, R52/53 | < -91% |
| CAS: 68609-97-2<br>EINECS: 271-846-8<br>Index Number;  | <b>Alkyl C-12-C-14 Glycidyl Ether</b><br>Skin Irritant 1, Skin Sens. 1, Muta. 2; Aquatic Chronic 2; R 43; Xi 38; R 38, R43.       | < 9%   |

**Additional information:** Balance of other ingredients are non-hazardous or less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers).

## Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/22/2014

Revision: 10/22/2014

### Trade Name: E100-VB5™ - Epoxy Vapor Barrier – Part A

#### 4 First aid measures

##### 4.1 Description of first aid measures

###### After inhalation:

If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if breathing difficulty continues.

###### After skin contact:

Wash skin thoroughly after handling. Seek medical attention if irritation develops and persists. Remove contaminated clothing. Launder contaminated clothing before re-use.

###### After eye contact:

If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Seek medical attention.

###### After swallowing:

If product is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or MSDS with the victim to the health professional.

##### 4.2 Most important symptoms and effects, both acute and delayed.

**Acute:** This material may cause irritation to skin and eyes. Product may cause an allergic skin reaction.

**Chronic:** Prolonged or repeated skin contact may cause allergic skin reaction or dermatitis.

**Target Organs:**      **Acute:** Eye, Skin      **Chronic:** Skin

**Hazards:** Pre-existing skin or eye problems may be aggravated by exposure to this product.

##### 4.3 Indication of any immediate medical attention and special treatment needed:

Treat symptoms and reduce over-exposure.

#### 5 Firefighting measures

##### 5.1 Extinguishing media

**Suitable extinguishing agents:** Carbon dioxide, foam, dry chemical, halon, water spray, sand, limestone powder.

##### 5.2 Special hazards arising from the substance or mixture:

This product is a flammable liquid above flash point shown.

##### 5.3 Advice for firefighters:

Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

#### 6 Accidental release measures

##### 6.1 Personal precautions, protective equipment and emergency procedures:

Personnel should be trained for spill response operations.

##### 6.2 Environmental precautions:

All work practices must be aimed at eliminating environmental contamination.

##### 6.3 Methods and material for containment and cleaning up:

Evacuate area. Contain spill if safe to do so. Prevent entry into drains, sewers, and other waterways. Soak up spilled material with an absorbent material and pick up and place in an appropriate waste container for disposal. Do not mix with other wastes. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations).



# Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/22/2014

Revision: 10/22/2014

**Trade Name: E100-VB5™ - Epoxy Vapor Barrier – Part A**

## 7 Handling and storage

### 7.1 Precautions for safe handling

As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid breathing vapors/mists generated by this product. Use in a well-ventilated location. Remove contaminated clothing immediately.

### 7.2 Conditions for safe storage, including any incompatibilities

#### Storage:

#### Requirements to be met by storerooms and receptacles:

Store between 10 and 50 °C (45 -125 °F) and avoid contact with skin and eyes. Do not store near acids or amines. Ground all transfer equipment. Good general housekeeping procedure should be followed. Do not eat drink or smoke while using the material. Emergency showers should be readily available. Material may partially freeze in cold temperatures which will result in crystals and haziness. If this occurs rewarm and homogenize. Avoid contact with skin eyes. Vapors may irritate eyes and will irritate the skin. Use only with good ventilation and PPE. Keep container closed when not in use.

### 7.3 Specific end use(s): No information

## 8 Exposure controls/personal protection

### Additional information about design of technical facilities:

Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above. Use local exhaust ventilation to control airborne vapor. Ensure eyewash/safety shower stations are available near areas where this product is used.

### 8.1 Control parameters

#### Ingredients with limit values that require monitoring at the workplace:

Currently, International exposure limits are not established for the components of this product. Please check with competent authority in each country for the most recent limits in place.

### 8.2 Exposure controls

#### Personal protective equipment:

#### General protective and hygienic measures:

*The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.*

**Respiratory protection:** Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

**Protection of hands:** Use chemical resistant gloves to prevent skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.



Protective gloves

#### Material of gloves:

The selection of suitable gloves does not only depend on the material, but also on the quality, and varies from manufacturer to manufacturer.

#### Penetration time of glove material:

The exact break through time has to be determined by the manufacturer of the protective gloves. DO NOT exceed the breakthrough time set by the Manufacturer.

**Eye protection:** Safety glasses or chemical goggles as appropriate to prevent eye contact. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.



Tightly sealed goggles

# Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/22/2014

Revision: 10/22/2014

## Trade Name: E100-VB5™ - Epoxy Vapor Barrier – Part A

### Body Protection:

Use body protection appropriate to prevent contact (e.g. lab coat, overalls). If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards.

## 9 Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### General Information

#### Appearance:

Form:

Liquid

Color:

Water – clear to slight amber

Odor:

Mild epoxy odor

Odor threshold:

Not Available

|                                 |   |
|---------------------------------|---|
| pH-value:                       | Not Available   |
| Change in condition             |   |
| Melting point/Melting range:    | No data available   |
| Boiling point/Boiling range:    | >200°C  |
| Flash point:                    | >392°F (>200°C)   |
| Flammability (solid, gaseous):  | No data available   |
| Auto/Self-ignition temperature: | Not established   |
| Decomposition temperature:      | No data available   |
| Self-igniting:                  | No data available   |
| Danger of explosion:            | This product is a flammable liquid above flash point shown above. |
| Explosion limits                |   |
| Lower:                          | Not established   |
| Upper:                          | Not established   |
| Vapor pressure at 25 °C:        | <0.1 mmHg   |

|   |   |
|---|---|
| Density at 20°C:                        | 9.13 lbs. per gallon, specific gravity 1.10 |
| Relative density:                       | No data available                           |
| Vapor density:                          | No data available                           |
| Evaporation rate:                       | No data available                           |
| Solubility in / Miscibility with Water: | Not Available                               |
| Specific Gravity 20oC: (Water = 1):     | Not Available                               |
| Viscosity:                              |   |
| Dynamic:                                | No data available                           |
| Kinematic:                              | No data available                           |
| Solvent content:                        |   |
| Organic solvents:                       | No data available                           |
| VOC (EC)                                | No data available                           |
| 9.2 Other information                   | No data available                           |

## Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/22/2014

Revision: 10/22/2014

### Trade Name: E100-VB5™ - Epoxy Vapor Barrier – Part A

#### 10 Stability and reactivity

##### 10.1 Reactivity

##### 10.2 Chemical stability: Product is stable

**Thermal decomposition / conditions to be avoided:** When heated to decomposition this product produces noxious gases such as CO, CO<sub>2</sub>, hydrocarbons and soot.

##### 10.3 Possibility of hazardous reactions: No data available

##### 10.4 Conditions to avoid: Contact with incompatible materials

##### 10.5 Incompatible materials: Oxidizing agents and amines should be avoided as these will cause exothermic polymerization. Avoid extreme heat

##### 10.6 Hazardous decomposition products: Will not occur

#### 11 Toxicological information

##### 11.1 Information on toxicological effects: Toxicity data is available for this product

##### Acute toxicity:

|              |       |               |        |
|--------------|-------|---------------|--------|
| Acute Dermal | LD 50 | >20,000 mg/kg | Rabbit |
| Acute Oral   | LD 50 | >5,000 mg/kg  | Rat    |

**Primary irritant effect:** Contact with this product can be irritating to exposed skin and eyes.

**Sensitization:** This product is considered a skin sensitizer.

##### Additional toxicological information:

None of the ingredients are found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, IARC and therefore is not considered to be, nor suspected to be a cancer-causing agent by these agencies.

##### Reproductive toxicity information:

No information concerning the effects of this product and its components on the human reproduction system.

#### 12 Ecological information

##### 12.1 Toxicity

**Aquatic toxicity:** No evidence is currently available on this product's effects on aquatic life.

**Component Data:** CAS# 25085-99-8

Fathead Minnow LC50 3 mg/l 96 h

Toxicity to daphnia magna EC50 1.4 -1.7 mg/l 24 h

Bacteria: IC50 >42.6 mg/l 18 h

Biodegradation: 28 days 12% OECD

Bioaccumulation: Not readily biodegradable

##### 12.2 Persistence and degradability: No data available

##### 12.3 Bio accumulative potential: No data available

##### 12.4 Mobility in soil: No evidence is currently available on this product's effects on plants or animals.

##### Ecotoxicological effects:

##### Remark:

**Additional ecological information:** No data available

**General notes:** No specific data is available for this product, however this product is expected to be readily biodegradable

# Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/22/2014

Revision: 10/22/2014

**Trade Name: E100-VB5™ - Epoxy Vapor Barrier – Part A**

## 13 Disposal considerations

### 13.1 Waste treatment methods

#### Recommendations:

Waste disposal must be in accordance with appropriate Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan.

**RCRA WASTE CODE:** None Listed

**EU WASTE CODE:** Not Listed

## 14 Transport information

### 14.1 UN-Number

**DOT:CAN:** NOT REGULATED

**ADN; ADR: IMDG: IATA:** UN 3082

### 14.2 UN proper shipping name

**DOT:CAN;** NOT REGULATED

**ADR: ADN: IMDG: IATA:** Environmentally hazardous substance Liquid, N.O.S.  
(Bisphenol A, epoxy resin)

### 14.3 Transport hazard class(es)

**DOT; CAN:**



**ADN: ADR: IMDG: IATA**



### 14.4 Packing group

**DOT:CAN:** NOT REGULATED

**ADR: ADN: IMDG: IATA:** PG III

### 14.5 Environmental hazards:

Product contains environmentally hazardous substances: reaction Products of Epichlorohydrin and Bisphenol A)

**Marine pollutant:**

YES

**Special Markings (ADR):**



Notes: marine pollutant (IMDG code 2.9.3). For air transport, see special provision A97 (ICAO/IATA).  
**For surface shipments in the USA: Not Regulated**

### 14.6 Special precautions for user

## Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/22/2014

Revision: 10/22/2014

### Trade Name: E100-VB5™ - Epoxy Vapor Barrier – Part A

|  |                   |
|--|-------------------|
| <b>Danger code (Kemler):</b>   | No data available |
| <b>EMS Number:</b>   | No data available |
| <b>14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:</b> | No data available |
| <b>Transport/Additional information</b>  |                   |
| <b>ADR</b>   |                   |
| <b>Tunnel restriction code</b>   | No data available |
| <b>UN "Model Regulation":</b>  | No data available |

### 15 Regulatory information

#### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture. United States (USA)

**SARA:** This product is not subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act.: None

**Section 355 (extremely hazardous substances):** None of the ingredients are listed.

**Section 313 (Toxic Release Inventory):** None of the ingredients are listed.

**TSCA (Toxic Substances Control Act):** All ingredients are listed.

#### Proposition 65 (California):

##### Chemicals known to cause cancer:

None of the ingredients is listed.

#### Canada

##### Canadian Domestic Substances List (DSL):

All ingredients are listed

##### Canadian Ingredient Disclosure list (limit 0.1%):

None of the ingredients are listed.

##### Canadian Ingredient Disclosure list (limit 1%):

None of the ingredients are listed.

**15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/22/2014

Revision: 10/22/2014

**Trade Name: E100-VB5™ - Epoxy Vapor Barrier – Part A**

### 16 Other information

#### Relevant phrases:

- H312: Harmful in contact with skin
- H317: May cause an allergic skin reaction
- H412: Harmful to aquatic life with long lasting effects

#### Precautionary statements

- P264: Wash hands thoroughly after handling
- P270: Do not eat, drink or smoke when using this product
- P271: Use only in well-ventilated area.
- P273: Avoid release to the environment
- P280: Wear protective gloves/protective clothing/eye protection/face protection
- P337+P313: If eye irritation persists: Get medical advice/attention.
- P370+P378: In case of fire: Use for extinction: CO2, powder or water spray.
- P302+P352: IF ON SKIN: Wash with plenty of soap and water.
- P391: Collect spillage.
- P403+P235: Store in a well-ventilated place. Keep cool.
- P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

---

R21: Harmful in contact with skin

R34: Causes burns.

R43: May cause sensitization by skin contact

R52/53: Harmful to aquatic organisms may cause long-term adverse effects in the aquatic environment.

#### Abbreviations and acronyms:

- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- IMDG: International Maritime Code for Dangerous Goods
- DOT: US Department of Transportation.
- IATA: International Air Transport Association.
- ACGIH: American Conference of Governmental Industrial Hygienists.
- EINECS: European Inventory of Existing Commercial Chemical Substances.
- ELINCS: European List of Notified Chemical Substances.
- CAS: Chemical Abstracts Service (division of the American Chemical Society).
- NFPA: National Fire Protection Association (USA).
- HMIS: Hazardous Materials Identification System (USA).
- LC50: Lethal concentration, 50 percent.
- LD50: Lethal dose, 50 percent.

# Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 12/10/2014

Revision: 12/10/2014

**Trade Name: E100-VB5™ - Epoxy Vapor Barrier – Part B****1 Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier**

Trade Name: E100-VB5™ Part B

**1.2 Article No.: E100-VB5™ Part B****1.3 Details of the supplier of the Safety Data Sheet Manufacturer:**

Elite Crete Systems  
1151 Transport Drive,  
Valparaiso, IN 46383  
Toll Free: 888.323.4445  
Tel: (219) 465-7671  
Fax: (219) 531-0898  
[www.elitecrete.com](http://www.elitecrete.com)

**1.4 Emergency telephone number:**

CHEMTREC US DOMESTIC: (800-424-9300)  
CHEMTREC INTERNATIONAL: (703-527-3887)

**2 Hazards identification****2.1 Classification of the substance or mixture**

Classification according to Regulation (EC) No 1272/2008 and GHS:

Acute Oral Toxicity Category 4  
Serious eye damage category 1

**2.2 Label elements**

Labeling according to Regulation (EC) No 1272/2008:

Hazard pictograms:



GHS05



GHS07

Signal word: Danger

**Hazard Statements:**

H302: Harmful if swallowed

H318: Causes serious eye damage

**Precautionary Statements:**

Prevention: P264: Wash hands thoroughly after handling  
P270: Do not eat, drink or smoke when using this product

Response: P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell  
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310+P330: Immediately call a POISON CENTER or doctor/physician. Rinse mouth.

Disposal: P501: Disposal of contents/container to be specified in accordance with State, Federal and Local regulations.

# Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 12/10/2014

Revision: 12/10/2014

## Trade Name: E100-VB5™ - Epoxy Vapor Barrier – Part B

**Hazards no classified:** Harmful if swallowed. Severe eye irritant. Moderate respiratory irritant. Moderate skin irritant. Risk of serious damage to eyes.

### Hazard description:

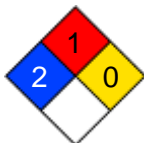
#### Canadian WHMIS Classification:

non corrosive, non hazardous

### WHMIS-symbols:

None required

### NFPA ratings (scale 0 – 4)



Health = 2  
Fire = 1  
Reactivity = 0

### HMIS-ratings (scale 0 – 4)

|            |   |
|------------|---|
| Health     | 2 |
| Fire       | 1 |
| Reactivity | 0 |

Health = 2  
Fire = 1  
Reactivity = 0

### 2.3 Other hazards

No known

## 3 Composition/information on ingredients

### 3.2 Mixture.

**Description:** Mixture of substances listed below with nonhazardous additives.

#### Hazardous components:

| Identification #                   | Description  | WT. % |
|------------------------------------|--|-------|
| CAS: 100-51-6<br>EINECS: 202-859-9 | <b>Benzyl Alcohol</b><br>GHS Classification: Not hazardous   | 30-%  |
| CAS: priority<br>EINECS:           | <b>Manic Base Adduct</b><br>GHS Classification Not Hazardous | 70%   |

**Additional information:** WHMIS Ingredient Disclosure List.

**WHMIS Trade Secret Registry Number: 6160 Grant date 2/14/2007**



## Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 12/10/2014

Revision: 12/10/2014

### Trade Name: E100-VB5™ - Epoxy Vapor Barrier – Part B

#### 4 First aid measures

##### 4.1 Description of first aid measures

###### After inhalation:

If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if breathing difficulty continues.

###### After skin contact:

Wash skin thoroughly after handling. Seek medical attention if irritation develops and persists. Remove contaminated clothing. Launder contaminated clothing before re-use.

###### After eye contact:

If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Seek medical attention if irritation develops.

###### After swallowing:

If product is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or MSDS with the victim to the health professional.

##### 4.2 Most important symptoms and effects, both acute and delayed.

**Acute:** This material may cause irritation to the respiratory tract and skin and even burns. Product may cause an allergic skin reaction.

**Chronic:** Prolonged or repeated skin contact may cause dermatitis.

**Hazards:** Pre-existing skin or respiratory system problems may be aggravated by exposure to this product.

##### 4.3 Indication of any immediate medical attention and special treatment needed:

Treat symptoms and reduce over-exposure.

#### 5 Firefighting measures

##### 5.1 Extinguishing media

###### Suitable extinguishing agents:

Carbon dioxide, foam, dry chemical, halon, water spray, sand, limestone powder.

##### 5.2 Special hazards arising from the substance or mixture:

Incomplete combustion may form carbon monoxide. May generate ammonia gas. May generate toxic nitrogen oxide gas. Burning produces toxic and noxious fumes. Down wind personnel must be evacuated.

##### 5.3 Advice for firefighters:

Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

#### 6 Accidental release measures

**6.1 Personal precautions, protective equipment and emergency procedures:** Personnel should be trained for spill response operations.

**6.2 Environmental precautions:** All work practices must be aimed at eliminating environmental contamination.

**6.3 Methods and material for containment and cleaning up:** Contain spill if safe to do so. Prevent entry into drains, sewers, and other waterways. Soak up with a non-combustible absorbent material and place in an appropriate container for disposal. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations).

# Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 12/10/2014

Revision: 12/10/2014

## Trade Name: E100-VB5™ - Epoxy Vapor Barrier – Part B

### 7 Handling and storage

#### 7.1 Precautions for safe handling

As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid breathing vapors/mists generated by this product. Use in a well-ventilated location. Remove contaminated clothing immediately.

#### 7.2 Conditions for safe storage, including any incompatibilities

##### Storage:

##### Requirements to be met by storerooms and receptacles:

. Do not store near acids.. keep containers tightly closed in a cool dry and well ventilated place.

#### 7.3 Specific end use(s): keep from freezing.

### 8 Exposure controls/personal protection

#### Additional information about design of technical facilities:

Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above.

Use local exhaust ventilation to control airborne vapor. Ensure eyewash/safety shower stations are available near areas where this product is used.

#### 8.1 Control parameters

##### Ingredients with limit values that require monitoring at the workplace:

Currently, International exposure limits are not established for the components of this product. Please check with competent authority in each country for the most recent limits in place.

#### 8.2 Exposure controls

##### Personal protective equipment:

##### General protective and hygienic measures:

*The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.*

**Respiratory protection:** Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

**Protection of hands:** Use chemical resistant gloves to prevent skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.



Protective gloves

##### Material of gloves:

The selection of suitable gloves does not only depend on the material, but also on the quality, and varies from manufacturer to manufacturer.

**Eye protection:** Safety glasses or chemical goggles as appropriate to prevent eye contact. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.



Safety goggles

##### Body Protection:

Use body protection appropriate to prevent contact (e.g. lab coat, overalls). If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards.

# Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 12/10/2014

Revision: 12/10/2014

**Trade Name: E100-VB5™ - Epoxy Vapor Barrier – Part B**

## 9 Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### General Information

##### Appearance:

Form:

Liquid

Color:

Hazy to amber to brown liquid

Odor:

Slight ammonia

Odor threshold:

Not Available

pH-value:

11.2

#### Change in condition

Melting point/Melting range:

No data available

Boiling point/Boiling range:

212°F (100°C)

Flash point:

N/A

Flammability (solid, gaseous):

No data available

Auto/Self-ignition temperature:

Not established

Decomposition temperature:

No data available

Self-igniting:

No data available

Danger of explosion:

N/A

#### Explosion limits

Lower:

Not established

Upper:

Not established

Vapor pressure at 20 °C:

No data available

Density at 20°C:

67.422 lb/ft<sup>3</sup> (1.08g/cm<sup>3</sup>) @ 70°F (21°C)

Relative density:

8.66 pounds per gallon @ 25°C

Vapor density:

No data available

Evaporation rate:

No data available

Solubility in / Miscibility with Water:

Not Available

Specific Gravity 20oC: (Water = 1):

Not Available

Viscosity:

400 cps (400mPa) @ 77°F

#### Solvent content:

Organic solvents:

0

VOC (EC)

0.00%

#### 9.2 Other information

No data available

## Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 12/10/2014

Revision: 12/10/2014

### Trade Name: E100-VB5™ - Epoxy Vapor Barrier – Part B

#### 10 Stability and reactivity

##### 10.1 Reactivity

##### 10.2 Chemical stability: Product is stable

**Thermal decomposition / conditions to be avoided:** When heated to decomposition this product produces noxious gases such as CO, CO<sub>2</sub>, NO<sub>x</sub>, amines, ammonia and others.

##### 10.3 Possibility of hazardous reactions: No data available

##### 10.4 Conditions to avoid: no data

##### 10.5 Incompatible materials: organic acids, citric acid, acetic acid, etc

##### 10.6 Hazardous decomposition products: Nitric acid, Ammonia, Nitrogen oxides (NO<sub>x</sub>), Nitrogen oxide can react with water vapors to form corrosive nitric acid.

#### 11 Toxicological information

##### 11.1 Information on toxicological effects: Toxicity data is available for this product

##### Acute toxicity:

|              |       |              |        |
|--------------|-------|--------------|--------|
| Acute Dermal | LD 50 | >2,000 mg/kg | Rabbit |
| Acute Oral   | LD 50 | >2,000 mg/kg | Rat    |

**Primary irritant effect:** Contact with this product can be irritating to exposed skin, eyes and respiratory system.

**Sensitization:** This product is considered a skin sensitizer.

##### Additional toxicological information:

None of the ingredients are found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, IARC and therefore is not considered to be, nor suspected to be a cancer-causing agent by these agencies.

**Reproductive toxicity information:** No information concerning the effects of this product and its components on the human reproduction system.

#### 12 Ecological information

##### 12.1 Toxicity

**Aquatic toxicity:** No data available

##### 12.2 Persistence and degradability: No data available

##### 12.3 Bioaccumulative potential: No data available

##### 12.4 Mobility in soil: No evidence is currently available on this product's effects on plants or animals.

##### Ecotoxicological effects:

##### Remark:

**Additional ecological information:** No data available

##### General notes:

##### Component Information:

no other information available

#### 13 Disposal considerations

##### 13.1 Waste treatment methods

##### Recommendations:

Waste disposal must be in accordance with appropriate Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan.

**RCRA WASTE CODE:** D002

**EU WASTE CODE:** To Be Established

## Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 12/10/2014

Revision: 12/10/2014

**Trade Name: E100-VB5™ - Epoxy Vapor Barrier – Part B**

### 14 Transport information

#### 14.1 UN-Number

DOT: CAN: ADR: ADN: IMDG: IATA: NOT REGULATED

#### 14.2 UN proper shipping name

ADR: DOT: CAN: ADR: ADN: IMDG: NOT REGULATED  
IATA:

#### 14.3 Transport hazard class(es)

DOT: CAN: ADR: ADN: IMDG: IATA:

Class:

NOT REGULATED

Label:

#### 14.4 Packing group

DOT: CAN: ADR: ADN: IMDG: IATA: NOT REGULATED

#### 14.5 Environmental hazards:

Marine pollutant:

NOT REGULATED

#### 14.6 Special precautions for user

Danger code (Kemler):  
EMS Number:

No data available

#### 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:

No data available

#### Transport/Additional information

##### ADR

Limited Quantities (LQ)

Excepted Quantities (EQ)

No data available

Transport Category:

Tunnel restriction code:

#### UN "Model Regulation":

No data available

## Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 12/10/2014

Revision: 12/10/2014

**Trade Name: E100-VB5™ - Epoxy Vapor Barrier – Part B**

### 15 Regulatory information

#### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture. United States (USA)

**SARA:** This product is not subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act.: None

**Section 355 (extremely hazardous substances):** None of the ingredients are listed.

**Section 313 (Toxic Release Inventory):** None of the ingredients are listed.

**TSCA (Toxic Substances Control Act):** All ingredients are listed.

#### Proposition 65 (California):

##### Chemicals known to cause cancer:

None of the ingredients is listed.

#### Canada

##### Canadian Domestic Substances List (DSL):

All ingredients are listed

##### Canadian Ingredient Disclosure list (limit 0.1%):

None of the ingredients are listed.

##### Canadian Ingredient Disclosure list (limit 1%):

None of the ingredients are listed.

#### 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

WHMIS Ingredient Disclosure List.

**WHIMS Trade Secrete Registry Number(s) 6160 Grant date 2/14/2007**

### 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

#### Hazard Statements:

H302: Harmful if swallowed

H318: Causes serious eye damage

#### Precautionary Statements:

Prevention: P264: Wash hands thoroughly after handling

P270: Do not eat, drink or smoke when using this product

Response: P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310+P330: Immediately call a POISON CENTER or doctor/physician. Rinse mouth.

Disposal: P501: Disposal of contents/container to be specified in accordance with State, Federal and

#### Abbreviations and acronyms:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation.

IATA: International Air Transport Association.

ACGIH: American Conference of Governmental Industrial Hygienists.

EINECS: European Inventory of Existing Commercial Chemical Substances.

ELINCS: European List of Notified Chemical Substances.

CAS: Chemical Abstracts Service (division of the American Chemical Society).

NFPA: National Fire Protection Association (USA).

HMIS: Hazardous Materials Identification System (USA).

LC50: Lethal concentration, 50 percent.

LD50: Lethal dose, 50 percent.

# Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/28/2014

Revision: 10/28/2014

## Trade Name: AUS-V™ - Aliphatic Urethane Coating – Part A

### 1 Identification of the substance/mixture and of the company/undertaking

#### 1.1 Product identifier

Trade Name: AUS-V™ - Part A

#### 1.2 Article No.: AUS-V™ - Part A

#### 1.3 Details of the supplier of the Safety Data Sheet Manufacturer:

Elite Crete Systems  
1151 Transport Drive  
Valparaiso, IN 46383  
Toll Free: 888.323.4445  
Tel: (219) 465-7671  
Fax: (219) 531-0898  
[www.elitecrete.com](http://www.elitecrete.com)

#### 1.4 Emergency telephone number:

CHEMTREC US DOMESTIC: (800-424-9300)  
CHEMTREC INTERNATIONAL: (703-527-3887)

### 2 Hazards identification

#### 2.1 Classification of the substance or mixture

##### Classification according to Regulation (EC) No 1272/2008 and GHS:

The following Hazard Statements are applicable only to the EU regulations and not the US GHS regulation: H361fd, H411.

The following Hazard Statements are applicable only according to OSHA regulations within the United States. These Statements are not applicable for the CLP regulation (1272/2008/EC) in the EU: H361.



GHS07 exclamation mark

*Acute Tox. 2; H302: Harmful if swallowed.*

*Skin Sensitization 1; H317: May cause an allergic skin reaction. STOT SE 3; H335: May cause respiratory irritation.*

##### Classification according to Directive 67/548/EEC or Directive 1999/45/EC:

Xn; Harmful. R22-62: Harmful if swallowed. Possible risk of impaired fertility. Xi; Sensitizing.

Xi; Irritant.. R22-48: Harmful if swallowed.

##### Information concerning particular hazards for human and environment:

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

##### Classification system:

The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

#### 2.2 Label elements

##### Labeling according to Regulation (EC) No 1272/2008:

##### Hazard pictograms:



GHS07

Signal Word: Warning

# Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/28/2014

Revision: 10/28/2014

## Trade Name: AUS-V™ - Aliphatic Urethane Coating – Part A

### Hazard-determining components of labelling:

N/A

### Hazard statements

H312: Harmful in contact with skin

### Precautionary statements

P264: Wash hands thoroughly after handling

P270: Do not eat, drink or smoke when using this product

P271: Use only in well ventilated area.

P273: Avoid release to the environment

P280: Wear protective gloves/protective clothing/eye protection/face protection

P337+P313: If eye irritation persists: Get medical advice/attention.

P370+P378: In case of fire: Use for extinction: CO2, powder or water spray.

P302+P352: IF ON SKIN: Wash with plenty of soap and water.

P391: Collect spillage.

P403+P235: Store in a well-ventilated place. Keep cool.

P501: Dispose of contents/container in accordance with local/regional/national/international regulations

### 2.3 Other hazards

#### Results of PBT and vPvB assessment:

**PBT:** Not applicable.

**vPvB:** Not applicable.

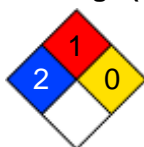
#### Hazard description:

**Canadian WHMIS Classification:** This product is categorized as a Class D Division 2B Materials causing other toxic effects, as per the Controlled Product Regulations

#### WHMIS-symbols:



#### NFPA ratings (scale 0 - 4)



Health = 2  
Fire = 1  
Reactivity = 0

#### HMIS-ratings (scale 0 - 4)

|            |   |
|------------|---|
| Health     | 2 |
| Fire       | 1 |
| Reactivity | 0 |

Health = 2  
Fire = 1  
Reactivity = 0

### 2.3 Other hazards

No known



# Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 10/28/2014

Revision: 10/28/2014

## Trade Name: AUS-V™ - Aliphatic Urethane Coating – Part A

### 3 Composition/information on ingredients

#### 3.2 Mixture.

**Description:** Mixture of substances listed below with nonhazardous additives.

#### Hazardous components:

| Identification #                                      | Description  | WT. %    |
|---|--|----------|
| CAS: 5131-66-8<br>EINECS: Not Listed<br>Index Number: | <b>Propylene glycol n-Butyl ether</b><br>HAZARD CLASSIFICATION: [Xn] Harmful, [Xi] Irritant<br>RISK PHRASES: R21, R34, R43, R52/53 | < 95-99% |
| CAS: 102-71-6   | <b>Triethanolamine</b><br>Skin Irritant 1, Skin Sens. 1, Muta. 2; Aquatic Chronic 2; R 43; Xi 38; R 38, R43.                       | < 5%     |

**Additional information:** Balance of other ingredients are non-hazardous or less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers).

### 4 First aid measures

#### 4.1 Description of first aid measures

##### After inhalation:

If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if breathing difficulty continues.

##### After skin contact:

Wash skin thoroughly after handling. Seek medical attention if irritation develops and persists. Remove contaminated clothing. Launder contaminated clothing before re-use.

##### After eye contact:

If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Seek medical attention.

##### After swallowing:

If product is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or MSDS with the victim to the health professional.

#### 4.2 Most important symptoms and effects, both acute and delayed.

**Acute:** This material may cause irritation to skin and eyes. Product may cause an allergic skin reaction.

**Chronic:** Prolonged or repeated skin contact may cause allergic skin reaction or dermatitis.

**Target Organs:**      **Acute:** Eye, Skin      **Chronic:** Skin

**Hazards:** Pre-existing skin or eye problems may be aggravated by exposure to this product.

#### 4.3 Indication of any immediate medical attention and special treatment needed:

Treat symptoms and reduce over-exposure.

## Safety Data Sheet

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**Trade Name: AUS-V™ - Aliphatic Urethane Coating – Part A**

### 5 Firefighting measures

#### 5.1 Extinguishing media

**Suitable extinguishing agents:** Carbon dioxide, foam, dry chemical, halon, water spray, sand, limestone powder.

**5.2 Special hazards arising from the substance or mixture:** This product is a flammable liquid above flash point shown.

**5.3 Advice for firefighters:** Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

### 6 Accidental release measures

**6.1 Personal precautions, protective equipment and emergency procedures:** Personnel should be trained for spill response operations.

**6.2 Environmental precautions:** All work practices must be aimed at eliminating environmental contamination.

**6.3 Methods and material for containment and cleaning up:** Evacuate area. Contain spill if safe to do so. Prevent entry into drains, sewers, and other waterways. Soak up spilled material with an absorbent material and pick up and place in an appropriate waste container for disposal. Do not mix with other wastes. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations).

### 7 Handling and storage

#### 7.1 Precautions for safe handling

As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid breathing vapors/mists generated by this product. Use in a well-ventilated location. Remove contaminated clothing immediately.

#### 7.2 Conditions for safe storage, including any incompatibilities

##### Storage:

##### Requirements to be met by storerooms and receptacles:

Store between 10 and 50 °C (45 -125 °F) and avoid contact with skin and eyes. Do not store near acids or amines. Ground all transfer equipment. Good general housekeeping procedure should be followed. Do not eat drink or smoke while using the material. Emergency showers should be readily available. Material may partially freeze in cold temperatures which will result in crystals and haziness. If this occurs rewarm and homogenize. Avoid contact with skin eyes. Vapors may irritate eyes and will irritate the skin. Use only with good ventilation and PPE. Keep container closed when not in use.

**7.3 Specific end use(s):** No information

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**Trade Name: AUS-V™ - Aliphatic Urethane Coating – Part A**

## 8 Exposure controls/personal protection

### Additional information about design of technical facilities:

Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above.

Use local exhaust ventilation to control airborne vapor. Ensure eyewash/safety shower stations are available near areas where this product is used.

### 8.1 Control parameters

#### Ingredients with limit values that require monitoring at the workplace:

Currently, International exposure limits are not established for the components of this product. Please check with competent authority in each country for the most recent limits in place.

### 8.2 Exposure controls

#### Personal protective equipment:

##### General protective and hygienic measures:

*The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.*

**Respiratory protection:** Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

**Protection of hands:** Use chemical resistant gloves to prevent skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.



Protective gloves

#### Material of gloves:

The selection of suitable gloves does not only depend on the material, but also on the quality, and varies from manufacturer to manufacturer.

#### Penetration time of glove material:

The exact break through time has to be determined by the manufacturer of the protective gloves. DO NOT exceed the breakthrough time set by the Manufacturer.

**Eye protection:** Safety glasses or chemical goggles as appropriate to prevent eye contact. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.



Tightly sealed goggles

#### Body Protection:

Use body protection appropriate to prevent contact (e.g. lab coat, overalls). If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards.

# Safety Data Sheet

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**Trade Name: AUS-V™ - Aliphatic Urethane Coating – Part A**

## 9 Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### General Information

#### Appearance:

Form: Liquid

Color: Clear

Odor: Mild

Odor threshold: Not Available

|   |   |
|---|---|
| pH-value:                               | Not Available   |
| Change in condition                     |   |
| Melting point/Melting range:            | No data available   |
| Boiling point/Boiling range:            | >200°C  |
| Flash point:                            | >392°F (>200°C)   |
| Flammability (solid, gaseous):          | No data available   |
| Auto/Self-ignition temperature:         | Not established   |
| Decomposition temperature:              | No data available   |
| Self-igniting:                          | No data available   |
| Danger of explosion:                    | This product is a flammable liquid above flash point shown above. |
| Explosion limits                        |   |
| Lower:                                  | Not established   |
| Upper:                                  | Not established   |
| Vapor pressure at 25 °C:                | <0.1 mmHg   |
| Density at 20°C:                        | 8.64 lbs. per gallon, specific gravity 1.03                       |
| Relative density:                       | No data available   |
| Vapor density:                          | No data available   |
| Evaporation rate:                       | No data available   |
| Solubility in / Miscibility with Water: | Not Available   |
| Specific Gravity 20oC: (Water = 1):     | Not Available   |
| Viscosity:                              |   |
| Dynamic:                                | No data available   |
| Kinematic:                              | No data available   |
| Solvent content:                        |   |
| Organic solvents:                       | No data available   |
| VOC (EC)                                | No data available   |
| 9.2 Other information                   | No data available   |

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### Trade Name: AUS-V™ - Aliphatic Urethane Coating – Part A

#### 10 Stability and reactivity

##### 10.1 Reactivity

##### 10.2 Chemical stability: Product is stable

**Thermal decomposition / conditions to be avoided:** When heated to decomposition this product produces noxious gases such as CO, CO<sub>2</sub>, hydrocarbons and soot.

##### 10.3 Possibility of hazardous reactions: No data available

##### 10.4 Conditions to avoid: Contact with incompatible materials

##### 10.5 Incompatible materials: Oxidizing agents and amines should be avoided as these will cause exothermic polymerization. Avoid extreme heat

##### 10.6 Hazardous decomposition products: Will not occur

#### 11 Toxicological information

##### 11.1 Information on toxicological effects: Toxicity data is available for this product

##### Acute toxicity:

|              |       |               |        |
|--------------|-------|---------------|--------|
| Acute Dermal | LD 50 | >20,000 mg/kg | Rabbit |
| Acute Oral   | LD 50 | >5,000 mg/kg  | Rat    |

**Primary irritant effect:** Contact with this product can be irritating to exposed skin and eyes.

**Sensitization:** This product is considered a skin sensitizer.

##### Additional toxicological information:

None of the ingredients are found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, IARC and therefore is not considered to be, nor suspected to be a cancer-causing agent by these agencies.

##### Reproductive toxicity information:

No information concerning the effects of this product and its components on the human reproduction system.

#### 12 Ecological information

##### 12.1 Toxicity

**Aquatic toxicity:** No evidence is currently available on this product's effects on aquatic life.

##### 12.2 Persistence and degradability: No data available

##### 12.3 Bio accumulative potential: No data available

##### 12.4 Mobility in soil: No evidence is currently available on this product's effects on plants or animals.

##### Ecotoxicological effects:

##### Remark:

**Additional ecological information:** No data available

**General notes:** No specific data is available for this product, however this product is expected to be readily biodegradable

#### 13 Disposal considerations

##### 13.1 Waste treatment methods

##### Recommendations:

Waste disposal must be in accordance with appropriate Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan.

**RCRA WASTE CODE:** None Listed

**EU WASTE CODE:** Not Listed

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**Trade Name: AUS-V™ - Aliphatic Urethane Coating – Part A**

### 14 Transport information

#### 14.1 UN-Number

DOT: CAN: NOT REGULATED

ADN: ADR: IMDG: IATA: NOT REGULATED

#### 14.2 UN proper shipping name

DOT: CAN: NOT REGULATED

ADN: ADR: IMDG: IATA: NOT REGULATED

#### 14.3 Transport hazard class(es)

DOT: CAN: NOT REGULATED

ADR: ADN: IMDG: IATA NOT REGULATED

#### 14.4 Packing group

DOT: CAN: NOT REGULATED

ADN: ADR: IMDG :IATA NOT REGULATED

#### 14.5 Environmental hazards

N/A

#### Marine Pollutant:

NOT REGULATED

#### Special Marking (ADR):

**For surface shipments within the USA Not Regulated.**

#### 14.6 Special precautions for user

Danger code (Kemler): NOT APPLICABLE

EMS Number:

#### 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:

NOT APPLICABLE

#### Transport/Additional information

#### ADR

Tunnel restriction code NOT APPLICABLE

#### UN "Model Regulation":

NOT APPLICABLE

## Safety Data Sheet

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### Trade Name: AUS-V™ - Aliphatic Urethane Coating – Part A

#### 15 Regulatory information

##### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture. United States (USA)

**SARA:** This product is not subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act.: None

**Section 355 (extremely hazardous substances):** None of the ingredients are listed.

**Section 313 (Toxic Release Inventory):** None of the ingredients are listed.

**TSCA (Toxic Substances Control Act):** All ingredients are listed.

##### Proposition 65 (California):

###### Chemicals known to cause cancer:

None of the ingredients is listed.

##### Canada

###### Canadian Domestic Substances List (DSL):

All ingredients are listed

###### Canadian Ingredient Disclosure list (limit 0.1%):

None of the ingredients are listed.

###### Canadian Ingredient Disclosure list (limit 1%):

None of the ingredients are listed.

**15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

#### 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

##### Relevant phrases:

##### Abbreviations and acronyms:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road  
 IMDG: International Maritime Code for Dangerous Goods  
 DOT: US Department of Transportation.  
 IATA: International Air Transport Association.  
 ACGIH: American Conference of Governmental Industrial Hygienists.  
 EINECS: European Inventory of Existing Commercial Chemical Substances.  
 ELINCS: European List of Notified Chemical Substances.  
 CAS: Chemical Abstracts Service (division of the American Chemical Society).  
 NFPA: National Fire Protection Association (USA).  
 HMIS: Hazardous Materials Identification System (USA).  
 LC50: Lethal concentration, 50 percent.  
 LD50: Lethal dose, 50 percent.

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**Trade Name: AUS-V™ - Aliphatic Urethane Coating - Part B**

## 1 Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

Trade Name: AUS-V™ - Part B

### 1.2 Article No.: AUS-V™ - PART B

### 1.3 Details of the supplier of the Safety Data Sheet Manufacturer:

Elite Crete Systems  
1151 Transport Drive  
Valparaiso, IN 46383  
Toll Free: 888.323.4445  
Tel: (219) 465-7671  
Fax: (219) 531-0898  
[www.elitecrete.com](http://www.elitecrete.com)

### 1.4 Emergency telephone number:

CHEMTREC US DOMESTIC: (800-424-9300)  
CHEMTREC INTERNATIONAL: (703-527-3887)

## 2 Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification according to Regulation (EC) No 1272/2008 and GHS:

Acute Tox: 4 H332 Harmful if inhaled.  
Skin Sens: 1 H317 May cause an allergic skin reaction.  
STOT SE: 3 H335 May cause respiratory irritation.

#### Classification according to Directive 1999/45/EC:

Xn; Harmful  
R20: Harmful if inhaled.  
Xi; Irritant  
R37: Irritating to respiratory system  
Xi; Sensitizing  
R43: may cause sensitization by skin contact.

### Information concerning particular hazards for human and environment:

**Product Description:** This product is a water –white – pale straw colored liquid with a mild odor.

**Health Hazards:** Mild to moderate eye, skin and respiratory system irritant. Harmful if swallowed. May cause skin sensitization

**Flammability Hazards:** This product is Flammable above its flash point of 320°F (160°C)

**Reactivity Hazards:** None known.

**Environmental Hazards:** The environmental effects of this product have not been investigated; however it is not expected to cause significant adverse effects.

**Emergency Considerations:** Emergency responders must wear the proper personal protective equipment (and have appropriate fire-suppression equipment) suitable for the situation to which they are responding.

#### Classification system:

The classification is according to the latest editions of the EU-lists, and extended by company and literature data



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**Trade Name: AUS-V™ - Aliphatic Urethane Coating - Part B**

## 2.2 Label elements

**Labeling according to Regulation (EC) No 1272/2008:**

**Hazard pictograms:**



GHS07

**Signal Word:** Warning

**Hazard-determining components of labeling:**

Hexamethylene di-isocyanate oligomers, isocyanurate

Hexamethylene-di-isocyanate

**Hazard statements**

H332: Harmful if inhaled

H317: May cause an allergic skin reaction

H335: may cause respiratory irritation

**Precautionary statements**

P260: Do not breath dust/fume/gas/mist/vapors/spray.

P264: Wash hands thoroughly after handling

P280: Wear protective gloves/protective clothing/eye protection/face protection

P285: in case of inadequate ventilation wear respiratory protection.

P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for Breathing.

P333+P313: If skin irritation or rash occurs: Get medical advice/attention.

P370+P378: In case of fire: Use for extinction: CO<sub>2</sub>, powder or water spray.

P302+P352: IF ON SKIN: Wash with plenty of soap and water.

P391: Collect spillage.

P403+P233: Store in a well-ventilated place. Keep container tightly closed.

P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

**Other hazards:**

Combustible liquid.

May cause eye irritation.

On contact with water carbon monoxide is released.

**Results on PBT and vPvB assessment:**

**PBT:** no

**vPvB:** no

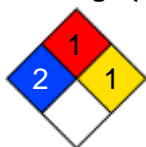
**Hazard description:**

**Canadian WHMIS Classification:** This product is categorized as a Class D Division 2B Materials causing other toxic effects, as per the Controlled Product Regulations

**WHMIS-symbols:**



**NFPA ratings (scale 0 - 4)**



Health = 2

Fire = 1

Reactivity = 1

**HMIS-ratings (scale 0 - 4)**

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|            |   |
|------------|---|
| Health     | 2 |
| Fire       | 1 |
| Reactivity | 1 |

Health = 2

Fire = 1

Reactivity = 1

## 2.3 Other hazards

No known

## 3 Composition/information on ingredients

### 3.2 Mixture.

**Description:** Mixture of substances listed below with nonhazardous additives.

**Hazardous components:**

| Identification #   | Description  | WT. %  |
|--|--|--------|
| CAS: 28182-81-2<br>EINECS: 931-274-8<br>Reg. Number: 01-2119485796-17-0002 | <b>Hexamethylene diisocyanate oligomers, Isocyanurate</b><br>HAZARD CLASSIFICATION: Xn R20, Xi R37, R43<br>Acute tox. 4, H332; Skin Sens. 1, H317; STOT SE 3, H##%   | 99.6%  |
| CAS: 822-06-0<br>EINECS 212-485-8<br>Reg. Number; 01-2119457571-37-0001    | <b>Hexamethylene-di-isocyanate</b><br>HAZARD CLASSIFICATION: T R23, Xn R42/43; Xi R36/37/38<br>Acute tox. 1, H330; Resp. Sens. 1, H334; Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335 | < 0.5% |

**Additional information:** Balance of other ingredients are non-hazardous or less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers).

## 4 First aid measures

### 4.1 Description of first aid measures

#### After inhalation:

If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if breathing difficulty continues.

#### After skin contact:

Wash skin thoroughly after handling. Seek medical attention if irritation develops and persists. Remove contaminated clothing. Launder contaminated clothing before re-use.

#### After eye contact:

If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Seek medical attention.

#### After swallowing:

If product is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or MSDS with the victim to the health professional.

### 4.2 Most important symptoms and effects, both acute and delayed.

No further relevant information available.

**Hazards:** Pre-existing skin or eye problems may be aggravated by exposure to this product.

### 4.3 Indication of any immediate medical attention and special treatment needed:

Treat symptoms and reduce over-exposure. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred. Treat symptomatically. No specific antidote available.

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### Trade Name: AUS-V™ - Aliphatic Urethane Coating - Part B

#### 5 Firefighting measures

##### 5.1 Extinguishing media

**Suitable extinguishing agents:** Carbon dioxide, foam, dry chemical, halon, water spray, sand, limestone powder.

**5.2 Special hazards arising from the substance or mixture:** Combustible. During combustion toxic vapors are released.

**5.3 Advice for firefighters:** Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

#### 6 Accidental release measures

**6.1 Personal precautions, protective equipment and emergency procedures:** Personnel should be trained for spill response operations. Wear full protective clothing, self contained breathing apparatus, gloves and boots. Do not approach downwind without self contained breathing mask. (NIOSH approved).

**6.2 Environmental precautions:** All work practices must be aimed at eliminating environmental contamination.

**6.3 Methods and material for containment and cleaning up:** Evacuate area. Contain spill if safe to do so. Prevent entry into drains, sewers, and other waterways. Soak up spilled material with an absorbent material and pick up and place in an appropriate waste container for disposal. Do not mix with other wastes. Dispose of in accordance with applicable Federal, State, and local procedures (see Sections 7, 8, 13, for further cautions, clean up and Disposal Considerations).

#### 7 Handling and storage

##### 7.1 Precautions for safe handling

As with all chemicals, avoid getting this product ON YOU or IN YOU. provide good ventilation. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid breathing vapors/mists generated by this product. Use in a well-ventilated location. Remove contaminated clothing immediately.

##### 7.2 Conditions for safe storage, including any incompatibilities

###### Storage:

###### Requirements to be met by storerooms and receptacles:

Store in a cool dry place with a floor coated or lined for watertight basin. Avoid direct contact with skin and eyes. Do not store near acids or amines. Good general housekeeping procedure should be followed. Do not eat drink or smoke while using the material. Emergency showers should be readily available... Avoid contact with skin eyes. Vapors may irritate eyes and will irritate the skin. Use only with good ventilation and PPE. Keep container closed when not in use.

**7.3 Specific end use(s):** No information

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### 8 Exposure controls/personal protection

The recommendations in this section should not be a substitute for a personal protective equipment (PPE) assessment performed by the employer as required by 29 CFR 1910 Subpart I.

#### Exposure Limits

##### Homopolymer of Hexamethylene Diisocyanate (28182-81-2)

AUS-V Part B Exposure Limit

Time weighted average 0.5 mg/m<sup>3</sup>

AUS-V Part B Exposure Limit

Short Term Exposure Limit (STEL): 1.0 mg/m<sup>3</sup> (15-min)

##### Hexamethylene-1,6-Diisocyanate (822-06-0)

US. ACGIH Threshold Limit Values

Time weighted average 0.005 ppm

Any component which is listed in section 3 and is not listed in this section does not have a known ACGIH TLV, OSHA PEL or supplier recommended occupational exposure limit.

#### Additional information about design of technical facilities:

Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above.

Use local exhaust ventilation to control airborne vapor. Ensure eyewash/safety shower stations are available near areas where this product is used.

#### 8.1 Control parameters

##### Ingredients with limit values that require monitoring at the workplace:

Currently, International exposure limits are not established for the components of this product. Please check with competent authority in each country for the most recent limits in place.

#### 8.2 Exposure controls

##### Personal protective equipment:

##### General protective and hygienic measures:

*The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.*

**Respiratory protection:** Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

**Protection of hands:** Use chemical resistant gloves to prevent skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.



Protective gloves

##### Material of gloves:

The selection of suitable gloves does not only depend on the material, but also on the quality, and varies from manufacturer to manufacturer.

##### Penetration time of glove material:

The exact break through time has to be determined by the manufacturer of the protective gloves. DO NOT exceed the breakthrough time set by the Manufacturer.

**Eye protection:** Safety glasses or chemical goggles as appropriate to prevent eye contact. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.



Tightly sealed goggles

##### Body Protection:

Use body protection appropriate to prevent contact (e.g. lab coat, overalls). If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards.

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**Trade Name: AUS-V™ - Aliphatic Urethane Coating - Part B**

### 9 Physical and chemical properties

#### 9.1 Information on basic physical and chemical properties

##### General Information

##### Appearance:

Form:

Liquid

Color:

Colorless to pale yellow

Odor:

none

Odor threshold:

Not Available

|  |  |
|--|--|
| <b>pH-value:</b>                                 | Not Applicable (reacts with Water)                                 |
| <b>Boiling point/Boiling range:</b>              | Decomposition  |
| <b>Flash point:</b>                              | >365°F (>185°C) (IN EN 22719)                                      |
| <b>Auto/Self-ignition temperature:</b>           | 833°F (445°C) (DIN 51794)  |
| <b>Decomposition temperature:</b>                | 357.8°F (181°C)  |
| <b>Explosion limits<br/>oxidizing properties</b> | Not established (Not oxidizing)<br>Not established (Not oxidizing) |
| <b>Vapor pressure at 68°F (20 °C):</b>           | HDI Polyisocyanate: 5.2 X 10-9 mm/Hg                               |
| <b>Density at 73°F (23°C):</b>                   | 9.65 lbs. per gallon, specific gravity 1.16 g/cm <sup>3</sup>      |
| <b>Bulk density:</b>                             | Approximately 1,150 kg/m <sup>3</sup>                              |
| <b>Solubility in / Miscibility with Water:</b>   | Reacts slowly to liberate CO <sub>2</sub> gas.                     |
| <b>Viscosity:</b>                                |  |
| <b>Dynamic:</b>                                  | 800 mPa.s (cps) @68°F (20°C)                                       |
| <b>Solvent content:</b>                          |  |
| <b>Organic solvents:</b>                         |  |
| <b>VOC (EC)</b>                                  | 0.00   |
| <b>9.2 Other information</b>                     | No further relevant information available                          |

### 10 Stability and reactivity

#### 10.1 Reactivity

**10.2 Chemical stability:** Product is stable at humanly acceptable environment temperature

**Thermal decomposition / conditions to be avoided:** When heated to decomposition this product produces noxious gases such as CO, CO<sub>2</sub>, hydrocarbons and soot.

**10.3 Possibility of hazardous reactions:** reacts with water, aqueous solutions and alcohols, amines, bases, protic solvents with a great release of CO<sub>2</sub>, and hence a risk of a pressure build up in confined areas, and forms an insoluble solid presipate.

**10.4 Conditions to avoid:** Contact with incompatible materials above

**10.5 Incompatible materials:** no further relevant information available than has been provided here.

**10.6 Hazardous decomposition products:** On thermal decomposition (pyrolysis) releases: toxic gases, Carbon dioxide,

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## Trade Name: AUS-V™ - Aliphatic Urethane Coating - Part B

### 11 Toxicological information

#### 11.1 Information on toxicological effects:

##### Acute toxicity:

##### LD/LC50 values:

#### 28182-81-2 Hexamethylene diisocyanate oligomers, Isocyanurate

Oral LD0 > 2500 mg/kg (rat) (OECD 423 (female))

Dermal LD0 > 2000 mg/kg (rabbit) (OECD 402)

> 2000 mg/kg (rat) OECD 402)

Inhalative LC50/4h 0.390 mg/l (rat) (OECD 403)

#### 822-06-0 hexamethylene-di-isocyanate

Oral LD50 746 mg/kg (rat) (OECD 401)

Dermal LD50 > 7000 mg/kg (rat) (OECD 402)

Inhalative LC50/4h 0.124 mg/l (rat) (OECD 403)

**Primary irritant effect:** Not classified as irritating to skin or eyes according to OECD 404, 405

**Inhalation:** May cause respiratory irritation. Source; Unpublished reports.

#### 28182-81-2 Hexamethylene diisocyanate oligomers, Isocyanurate

Inhalative NOAEC/ 6h 3mg/m<sup>3</sup> (rat) (OECD TG 403) (TRGS)

##### Sensitization:

May cause sensitization on contact with skin.

(OECD 429) (mouse)

Is Not considered as an respiratory sensitizer (Guinea-pig)

Human data available. Unpublished reports.

##### Repeated dose toxicity:

Is Not considered health hazardous by prolonged or repeated exposure. (Unpublished reports)

#### 28182-81-2 Hexamethylene diisocyanate oligomers, Isocyanurate

Inhalative NOEC 3.3mg/m<sup>3</sup> (rat) (OECD 413)

#### 822-06-0 hexamethylene-di-isocyanate

Inhalative NOAEC Tox Repeat 0.005 ppm (rat) (OECD 453)

##### Carcinogenicity:

Animal studies have not shown any carcinogenic potential.

#### 822-06-0 hexamethylene-di-isocyanate

Inhalative NOAEC Carc 0.164 ppm (rat) (OECD 453)

##### Mutagenicity:

Chromosomal aberrations (OECD 473, V79 cells):

Negative

Unpublished reports

##### Reproductive toxicity:

This product is Not considered hazardous to the reproduction.

(Internal evaluation)

#### 822-06-0 hexamethylene-di-isocyanate

Inhalative NOAEC Dvlp/Tera Tox 0.3ppm (rat) (OECD 414)

NOAEC Material Tox 0.005 ppm (rat) (OECD 414)

NOAEC Fert 0.3 ppm (rat) (OECD 422)

# Safety Data Sheet

According to 1907/2006/EC (REACH) and 1272/2008/EC (CLP)

Printing Date: 12/30/2014

Revision: 12/30/2014

**Trade Name: AUS-V™ - Aliphatic Urethane Coating - Part B**

## 12 Ecological information

### 12.1 Toxicity

**Aquatic toxicity:** No evidence is currently available on this product's effects on aquatic life. Source unpublished reports.

#### 28182-81-2 Hexamethylene diisocyanate oligomers, Isocyanurate

EC10/72h (static) 370 mg/l (Desmodesmus subspicatus) (EU C.3)  
 EL/50?48h (static) 127 mg/l (Daphnia magna) (EU C.2)  
 ErC50(0-72h) (static) 1000 mg/l (Desmodesmus subspicatus) (EU C.3)  
 LL0/96h  $\geq$  82.8 mg/l (Brachydanio rerio) EU C.1)

#### 822-06-0 hexamethylene-di-isocyanate

EC0/48h (static)  $\geq$ 89.1 mg/l (Daphnia magna) (EU C.2)  
 ErC50(0-72h) (static)  $>$ 77.4 mg/l (Desmodesmus subspicatus) EU C.3)  
 LC0/96h (static)  $\geq$ 82.8 mg/l (Brachydanio rerio) EU C.1)  
 NOEC/72h (static) 11.7 mg/l (Desmodesmus Subspicatus) (EU C.3)

### 12.2 Persistence and degradability:

Not biodegradable

#### 28182-81-2 Hexamethylene diisocyanate oligomers, Isocyanurate

BOD28 1% (bacteria) ((EU C.4-E) (Unpublished report)  
 DT50 3h (photolysis) ((79°F, 25°C) (AOPWIN v1.92)  
 .7h (hydrolysis) (( 73°F, 23°C) (ASTM D 4666( internal evaluation)

#### 822-06-0 hexamethylene-di-isocyanate

BOD28 42% (bacteria) ((EU C.4-E)  
 DT50 79°F, 25°C, 48.44 h (Photolysis) (AOPWIN v1.92)  
 73°F, 23°C 0.23 h (Hydrolysis) (ASTN 4666)

### Other information:

Reacts with:

-water and forms insoluble solid precipitate.

### 12.3 Bio accumulative potential:

Log Pow, see section 9.

Not bioaccumulable

(internal evaluation)

#### 28182-81-2 Hexamethylene diisocyanate oligomers, Isocyanurate

BCF 3.2 (fish) (BCFWIN v.217)

#### 822-06-0 hexamethylene-di-isocyanate

BCF 58 (fish) BCFWIN v2.17)

### 12.4 Mobility in soil:

#### 28182-81-2 Hexamethylene diisocyanate oligomers, Isocyanurate

Log Koc 7.8 (.) (PCKOCv1.66)

#### 822-06-0 hexamethylene-di-isocyanate

Log Koc 5861 (.) (PCKOCv.166)

**Other information:** Formation of insoluble polyuria

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### Trade Name: AUS-V™ - Aliphatic Urethane Coating - Part B

#### Ecological effects:

##### Behavior in sewerage processing plants.

**28182-81-2 Hexamethylene diisocyanate oligomers, Isocyanurate**

EC50/3h (static) (3828mg/l (bacteria) (OECD 209)

**822-06-0 hexamethylene-di-isocyanate**

EC50/3h (static) (842mg/l (bacteria) (OECD 209)

#### Additional ecological information;

**General notes:** Not classified as Dangerous for the environment

#### 12.5 Results of PBT and vPvB assessment

**PBT:** no

**vPvB:** no

**12.6 Other adverse effects:** No further relevant information available

### 13 Disposal considerations

#### 13.1 Waste treatment methods

##### Recommendations:

Neutralize with a mixture of ammonia solution (190 gm/l), water and ethanol (5%, 50% AND 45%)

Incinerate at a licensed installation in the EU. Disposal in USA waste disposal must be in accordance with appropriate Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan.

**RCRA WASTE CODE:** None Listed

**EU WASTE CODE:** 08-05-01

##### Un-cleaned packaging recommendation:

Allow container to drain thoroughly. Incinerate drums and containers at an approved licensed facility follow all local and federal laws and requirements. This is only a recommendation in lieu of direction.

### 14 Transport information

#### 14.1 UN-Number

**DOT: Canada TGD**

not regulated

**ADR, IMDG, IATA:**

Not restricted (Non regulated)

#### 14.2 UN proper shipping name

**DOT: Canada TGD**

NOT RESTRICTED NOT REGULATED

**ADR, IMDG, IATA:**

NOT Restricted (non regulated)

#### 14.3 Transport hazard class(es)

**DOT & Canada TGD**



**ADR, IMDG, IATA**





## Safety Data Sheet

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### Trade Name: AUS-V™ - Aliphatic Urethane Coating - Part B

#### 14.4 Packing group

DOT, Canada TGD not regulated

#### 14.5 Environmental hazards:

**Marine pollutant:** This products ingredients are not classified by the DOT as a Marine Pollutant (as defined by 49 CFR 172.101, Appendix B)

#### 14.6 Special precautions for user

**Danger code (Kemler):** No data available

**EMS Number:** No data available

#### 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:

No data available

#### Transport/Additional information

When individual containers are less than 33,332 lbs (15119 kg)  
This material ships as non regulated

#### ADR

**Tunnel restriction code** No data available

#### UN "Model Regulation":

No data available

### 15 Regulatory information

#### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture. United States (USA)

**SARA:** This product is not subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act.: None

**Section 355 (extremely hazardous substances):** None of the ingredients are listed.

**Section 313 (Toxic Release Inventory):** None of the ingredients are listed.

**TSCA (Toxic Substances Control Act):** All ingredients are listed.

#### Proposition 65 (California):

##### Chemicals known to cause cancer:

None of the ingredients is listed.

#### Canada

##### Canadian Domestic Substances List (DSL):

All ingredients are listed

##### Canadian Ingredient Disclosure list (limit 0.1%):

None of the ingredients are listed.

##### Canadian Ingredient Disclosure list (limit 1%):

None of the ingredients are listed.

#### 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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### 16 Other information

#### Relevant phrases:

H312: Harmful in contact with skin

H317: May cause an allergic skin reaction

#### Precautionary statements

P260: Do not breathe dust/fume/gas/mist/vapors/spray.

P264: Wash hands thoroughly after handling

P280: Wear protective gloves/protective clothing/eye protection/face protection

P285: in case of inadequate ventilation wear respiratory protection.

P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for Breathing.

P333+P313: If skin irritation or rash occurs: Get medical advice/attention.

P370+P378: In case of fire: Use for extinction: CO<sub>2</sub>, powder or water spray.

P302+P352: IF ON SKIN: Wash with plenty of soap and water.

P391: Collect spillage.

P403+P233: Store in a well-ventilated place. Keep container tightly closed.

P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

R34: Causes burns.

R43: May cause sensitization by skin contact

#### Abbreviations and acronyms:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation.

IATA: International Air Transport Association.

ACGIH: American Conference of Governmental Industrial Hygienists.

EINECS: European Inventory of Existing Commercial Chemical Substances.

ELINCS: European List of Notified Chemical Substances.

CAS: Chemical Abstracts Service (division of the American Chemical Society).

NFPA: National Fire Protection Association (USA).

HMIS: Hazardous Materials Identification System (USA).

LC50: Lethal concentration, 50 percent.

LD50: Lethal dose, 50 percent.